UC DAVIS HEALTH

gpTRAC

Research Evidence on Telehealth

What We Really Need to Know

James (Jim) Marcin, MD, MPH
jpmarcin@health.ucdavis.edu
UC Davis School of Medicine
Sacramento, California



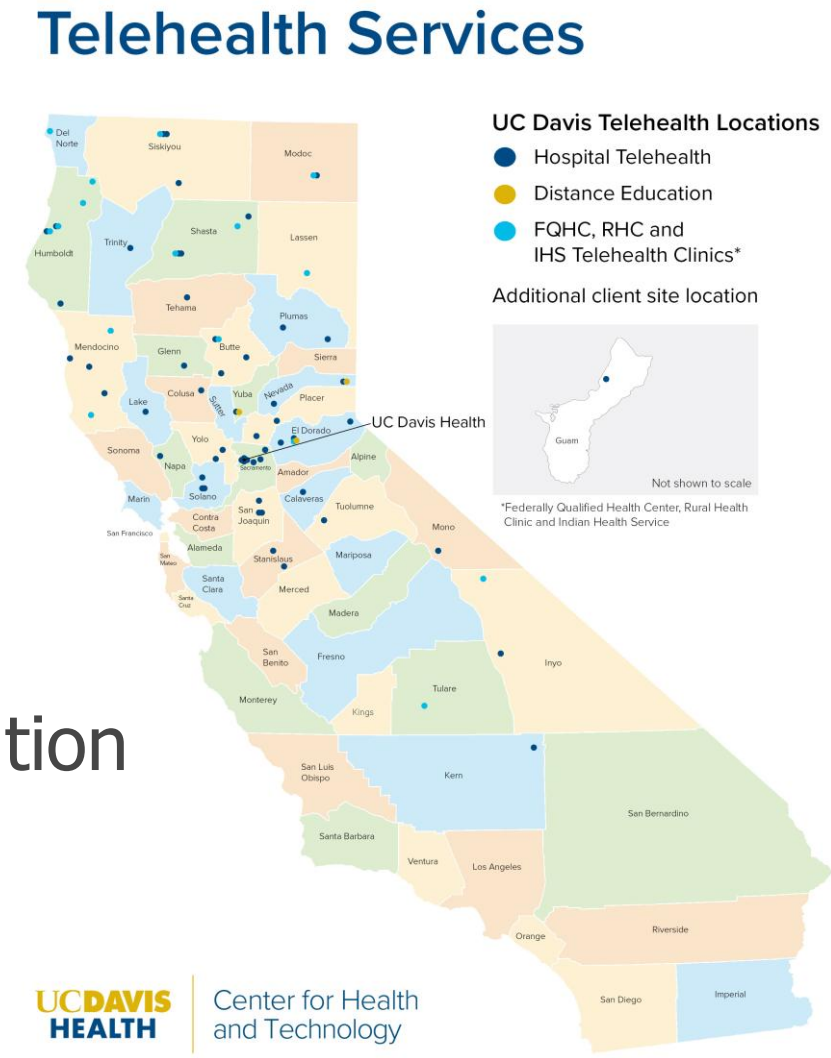
Goals of this presentation

- Discuss UC Davis' Telehealth Program
  - Pediatric Tele-Emergency Program
  - Evidence versus Utilization
- Discuss Mixed Evidence on Remote Patient Monitoring
  - Implications on Payers / Reimbursement
- Strategies for Effective Implementation of Telehealth

UC DAVIS HEALTH

Types of Telehealth at UC Davis Health

- Ambulatory Video Visits
- Ambulatory P-to-P (clinic-to-clinic)
- "External Inpatient" Telehealth
  - Tele-Peds; Tele-Hospitalist
  - Tele-Stroke; Tele-Nephrology
- "Internal Inpatient" Telehealth (UC Davis)
  - "Family Link"
  - Family Centered Rounds - Care Coordination
- Remote Patient Monitoring

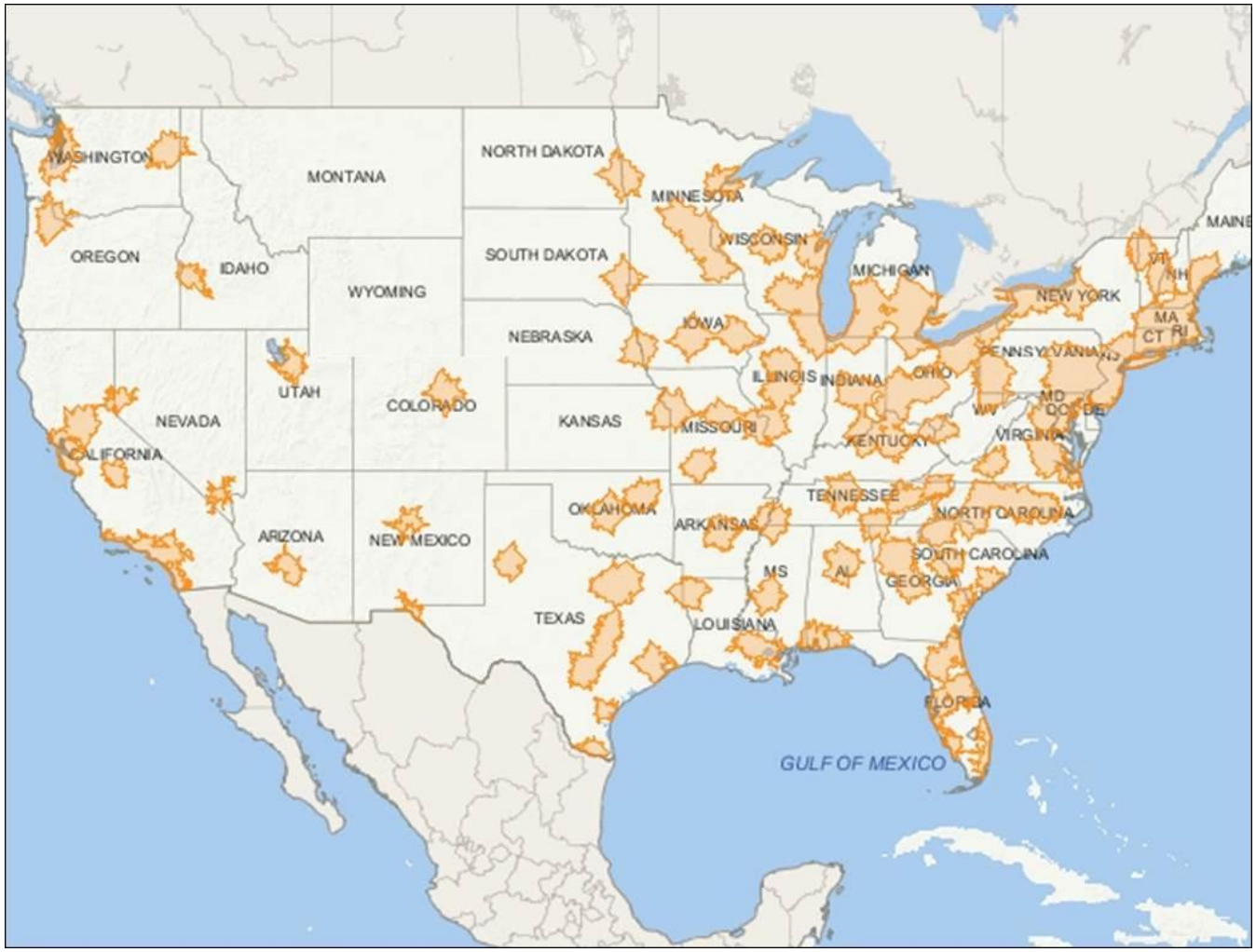


UCDAVIS HEALTH

UCDAVIS HEALTH | Center for Health and Technology

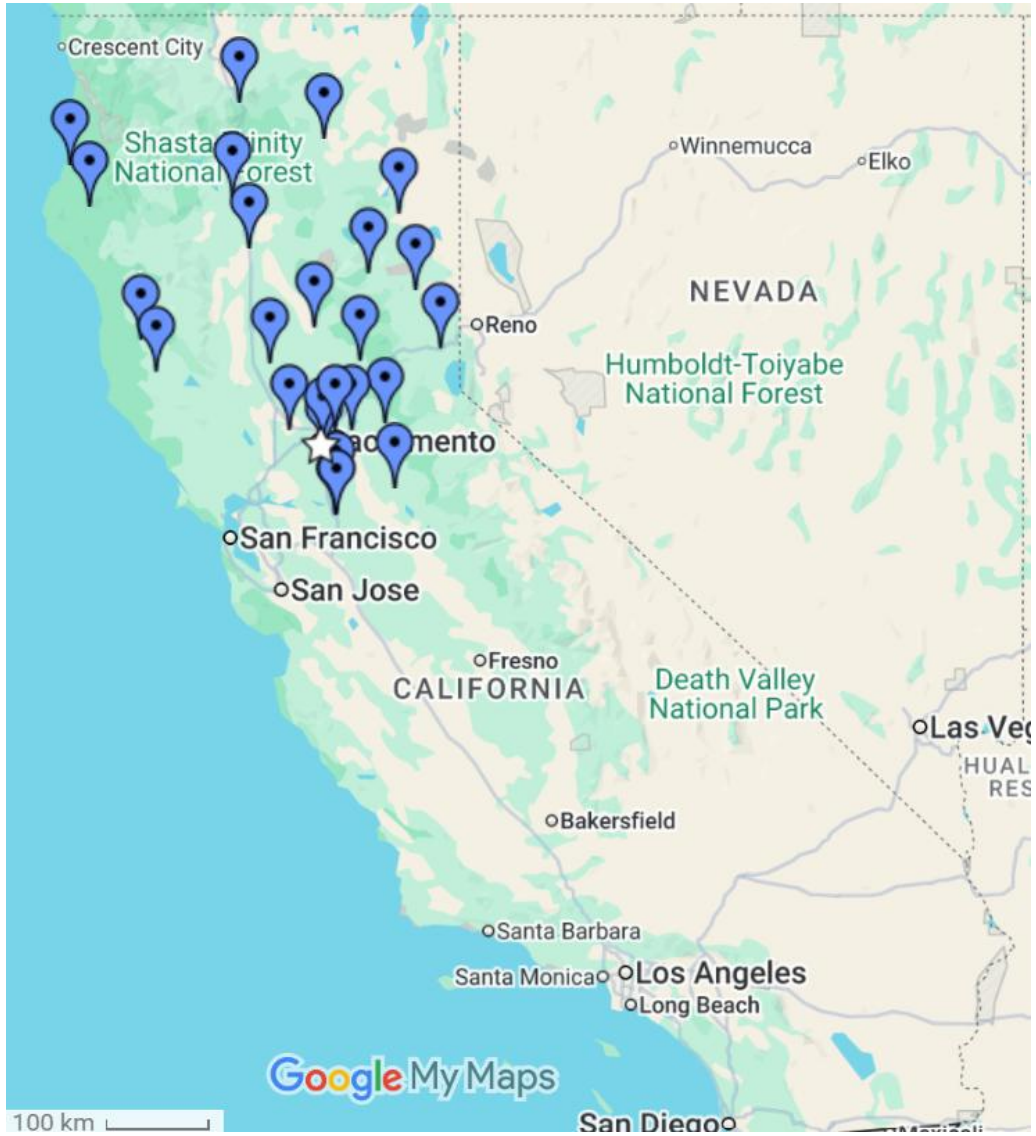
Access: Pediatric Telemedicine

- 16 million (23%) of children live >60 minutes from Children's Hospital (CHA)
- 41 million (57%) of children live >30 minutes from Pediatric Trauma Center (ACS)



UC DAVIS HEALTH

Pediatric Tele-Emergency



- 32 sites (rural focus)
- Pediatric ICU
- Pediatric Hospitalist
- Neonatology

- ~10% use rate per patient
  - Immediate care to the seriously ill
  - Assist in caring for less seriously ill

Pediatric Tele-Emergency Consultations

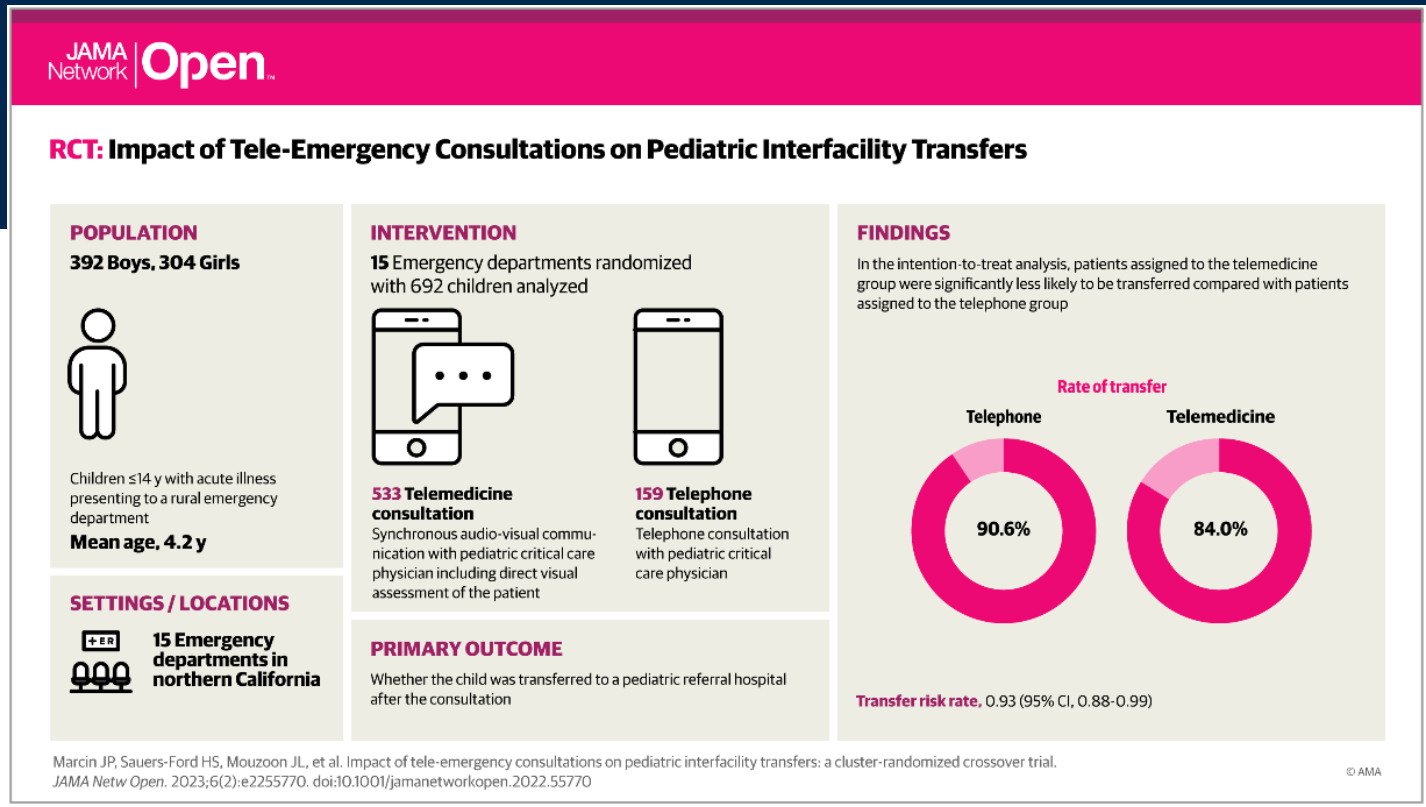
- Higher parent satisfaction
- Higher ED physician satisfaction
- Higher quality (implicit review)
- Lower rate of medication errors
- Improved communication during CPR
- Improved triage – placement of patient
- Fewer (inappropriate) transfers
- Overall cost savings

UCDAVIS HEALTH

JAMA Network Open

Impact of Tele-Emergency Consultations on Pediatric Interfacility Transfers:

A Cluster-Randomized Crossover Trial



- 629 children aged 14 years and younger presenting to 15 EDs.
- The adjusted risk of transfer was significantly lower in the telemedicine arm compared with the telephone arm
  - Treatment-received analysis: RR, 0.81; 95% CI, 0.71-0.94
  - Per-protocol analysis (RR, 0.79; 95% CI, 0.68-0.92).

UC DAVIS HEALTH

Virtual Pediatric Trauma Center (VPTC)

- 11 Hospitals – Pediatric Trauma (phone v telemedicine)
- Stepped wedge design (2022-2024)
- Primary Outcome: Parent experience of care (3-days)
- Qualitative interviews

- 595 injured children
  - 369 assigned to VPTC
  - 226 assigned to standard of care

UCDAVIS HEALTH

Virtual Pediatric Trauma Center (VPTC)

Quantitative Results

Parent experience of Care:

- "When your child left this hospital" – Improved

Qualitative Results

- 31 Parents + 33 Care Providers
  - Telemedicine eased parent emotions and anxieties
  - Strengthened parent-provider relationships
  - Helped prepare parents for the transfer process
  - Improved emotional state and calmed their children

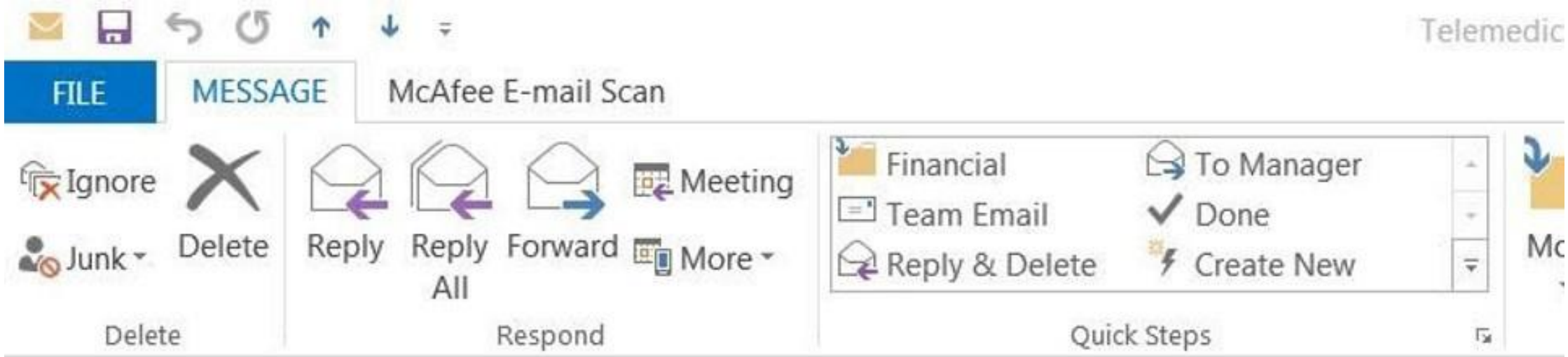
UCDAVIS HEALTH

If Telehealth is so good….

- Telehealth requires more time and effort
- Telehealth may not result in physician pay-credit
- Referring hospital teams want to err on side of safety



UC DAVIS HEALTH



Tue 5/10/2016 7:40 AM

[redacted]

Telemedicine

To James Marcin

You forwarded this message on 5/10/2016 7:40 AM.

I did another f[redacted] telemedicine consult.

(Actually, just looking at them after the telephone consultation is it really that bad).

Unanticipated Results….

- Teach an old dog new tricks…
  - Qualitative research
  - Dissemination & Implementation Science



UC DAVIS HEALTH

Benefits (and Risks) of Telehealth

By monitoring patients, we can:

- Engage patients in their care
- Identify medical concerns early
- Intervene earlier in care
- Keep patients healthier
- Prevent visits to hospital
- Avoid comorbidities (long term)
- Reduce overall healthcare costs

We can also:

- Provide too easy access to care
- Increase utilization of service
- Increase costs of care
- Reduce "VALUE" of care



UCDAVIS HEALTH

Hybrid Primary Care Visits & Quality

- Evaluate whether the proportion of primary care received via telehealth is associated with differences in quality-of-care 744,599 veterans 2021-2023

- If >50% of visits done via telehealth
  - Lower vaccination rates
  - Lower rates of statin adherence
  - Lower rates of hypertension control
  - Lower rates of screening for depression, alcohol, tobacco

Staloff J, et al. Primary Care by Telehealth and Care Quality in the Veterans Health Administration. JAMA Netw Open. 2026 Feb 2;9(2)

UC DAVIS HEALTH

Direct To Consumer – Avoiding Costly Care

- Access to 'on-demand' visits in commercial population
- 300,000 enrollees over 3 years; URI complaints
  N=981 DTC versus 1,962 matched in-person visits

- 12% of DTC telehealth visits replaced in-person visits
- 88% represented new utilization
- Net spending on ARI increased $45/telehealth user

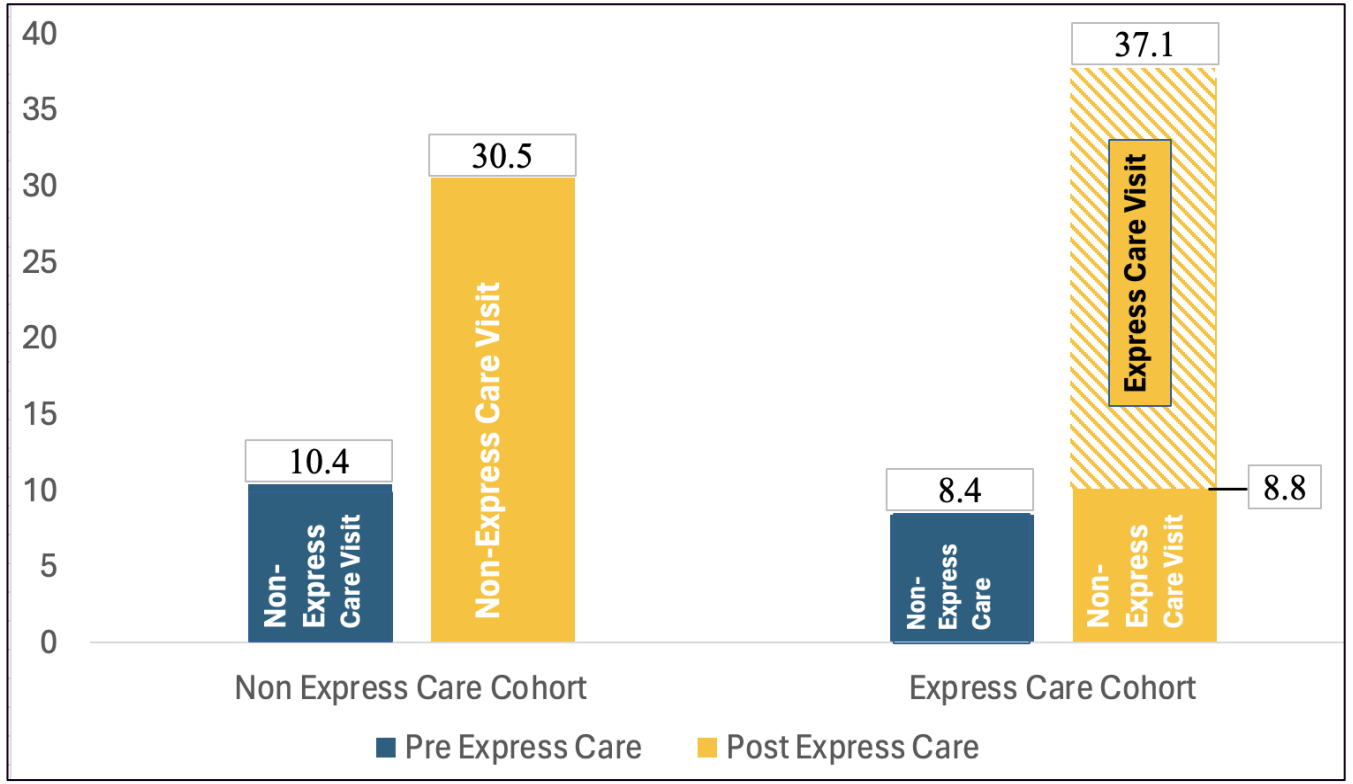
Ashwood JS, et al: **DTC Telehealth May Increase Access To Care But Does Not Decrease Spending** *Health Affairs*; March 2017

UCDAVIS HEALTH

Direct To Consumer – Avoiding Costly Care

- Access to 'on-demand' visits internal health system (UCD)
- 4,961 'on demand' - 33,549 in-person & sched video
- URI complaints

VISIT RATES PER 100 PEOPLE PER YEAR



Replacement	New Utilization
69%	31%

UC DAVIS HEALTH

Direct To Consumer – Quality

- CalPERS: >233,000 enrolled
- 214,944 in-person visits versus 4,657 DTC visits
- Healthcare Effectiveness Data and Information Set

In-person versus DTC

- Strep Throat – testing (50% v 3.4%)
- Antibiotics for bronchitis – avoidance (28% v 17%)
- Back Pain – avoid initial imaging (79% v 88%)

Uscher-Pines L, et al. **Access and Quality of Care in Direct-To-Consumer Telemedicine**. *Telemed J E Health* 2016

UCDAVIS HEALTH

RPM – Weight Loss

- IDEA Randomized Trial for Weight Loss
  - Adults with BMI between 25 - 40
  - N=471 patients all received

    Prescribed low calorie diet + activity + group counseling
  - Randomized at 6 months (1/2 get FitBit)
- Weight change at 24 months:

  Control group: mean weight loss = 5.9 kg [95% CI, 5.0-6.8]

  Intervention group: mean weight loss = 3.5 kg [95% CI, 2.6-4.5]

Jakicic JM, et al: **Effect of Wearable Technology Combined With a Lifestyle Intervention on Long-term Weight Loss: The IDEA Randomized Clinical Trial**. *JAMA* 2016

UC DAVIS HEALTH

RPM – Weight Loss

- Activity Tracker versus Activity Tracker + Coach Randomized Trial for Weight Loss
  - Adults with BMI between 27 - 45
  - N=400 patients all received

    Activity tracker + digital scale + text feedback
  - 12 weekly 10- to 15-minute supportive coaching calls
- Weight change at 6 months:

  Tracker: mean weight loss = -2.8 kg [95% CI, -3.5, -2.0]

  Tracker+Coach: mean weight loss = -4.8 kg [95% CI, -5.5, -4.1]

Spring B, et al: **An Adaptive Behavioral Intervention for Weight Loss Management A Randomized Clinical Trial**. *JAMA* 2024

UCDAVIS HEALTH

Meta-Analysis of RPM on Activity Trackers

- Evaluation of RCTs of using wearable biosensors (e.g., activity trackers)
- 2000 to 2016: 4,348 titles, 777 abstracts; 27 RCTs; 16 studies included
- **No significant benefit of activity tracker on six clinical outcomes**

  BMI: −0.73 (−1.84, 0.38)
  Weight: −1.29kg (−3.06, 0.48)
  Waist circumference: −2.41cm (−5.16, 0.34)
  Body fat percentage: 0.11 (−1.56, 1.34)
  Systolic blood pressure: −2.62 (−5.31, 0.06)
  Diastolic blood pressure: −0.99 (−2.73, 0.74)
- Health behavior intervention models and personalized coaching most successful

UCDAVIS HEALTH

Noah B: **Impact of remote patient monitoring on clinical outcomes: an updated meta-analysis of randomized controlled trials**. *NPJ Dgit Med*. 2018

RPM – Congestive Heart Failure

- BEAT HF Randomized Trial: 1,437 patients hospitalized with CHF randomized to:
  - Usual care: Health coaching telephone calls
  - Intervention: Health coaching telephone calls + telemonitoring (Daily BP, HR, symptoms, weight)
- No difference in 180 day readmissions: 49.2% vs 50.8%
- No difference in 30 day readmission or 180 day mortality

Ong MK, et al: **Effectiveness of Remote Patient Monitoring After Discharge of Hospitalized Patients With Heart Failure: The Better Effectiveness After Transition -- Heart Failure (BEAT-HF) Randomized Clinical Trial**. *JAMA Intern Med* 2016

UC DAVIS HEALTH

RPM – Congenital Heart Disease

- RCT of home monitoring of infants post-operatively
- Control (N=110): digital scale, pulse oximeter, educational Web site
- Intervention (N=109): daily text, e-mail, or phone call + twice weekly videoconferencing with APN. Daily automated communication about feeding, vomiting, weight, heart rate, oxygen saturation, and activity
- At four months post discharge:
  - Similar Parenting Stress Index
  - Similar rates PTSD among parents
  - Similar Parent Quality Of Life Inventory Scores
  - More infants in intervention group (66%) were readmitted to the hospital than in the control group (57%)

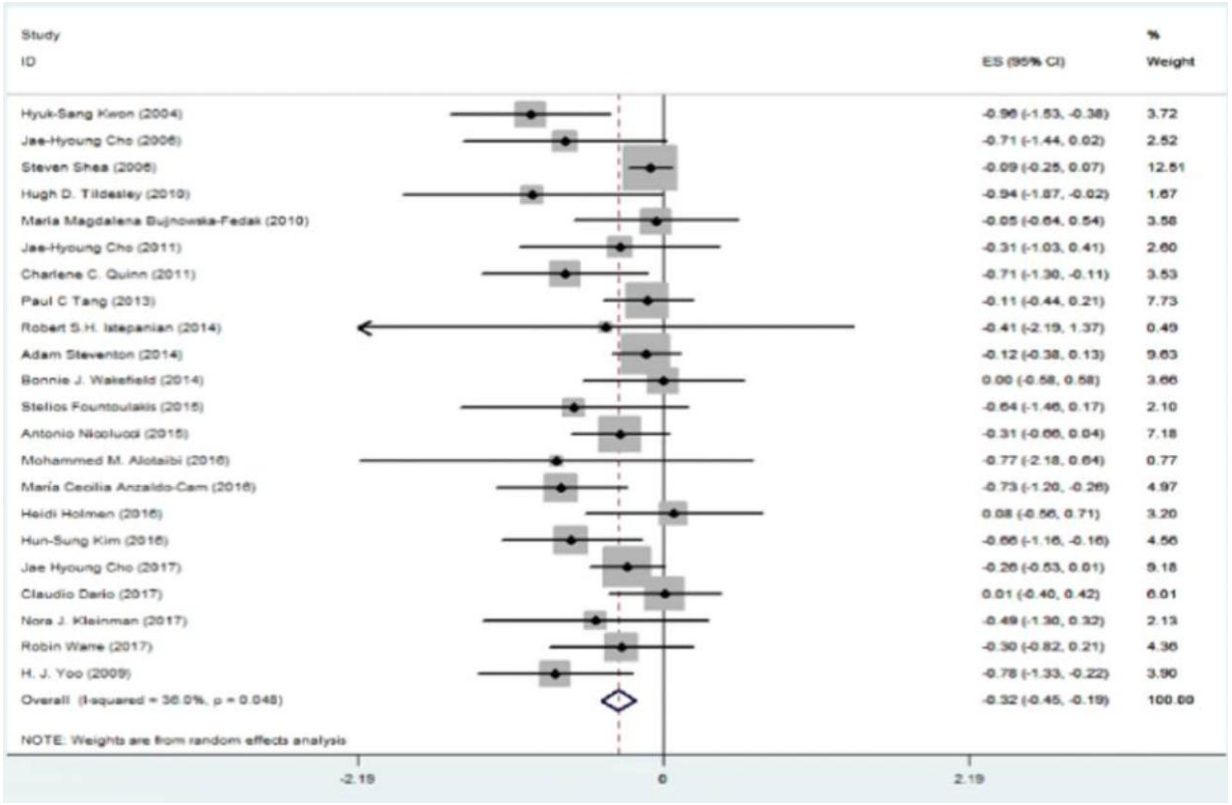
UCDAVIS HEALTH

Cooper BM, et al: **Telehealth Home Monitoring and Postcardiac Surgery for Congenital Heart Disease** *Pediatrics*. 2020

Meta-Analysis of RPM on Type 2 Diabetes

- Meta-Analysis
- Pooled reduction of HgbA1C:
  −0.32 (−0.19 to −0.45)





Salehi S, et al: **Assessment of remote patient monitoring (RPM) systems for patients with type 2 diabetes: a systematic review and meta-analysis**. *J Diabetes Metab Discord* 2020

UC DAVIS HEALTH

Meta-Analysis of RPM for High-Risk Patients

- 33 RCTs met the eligibility criteria
- Emergency Department Visits (8 Studies) and Outpatient Visits (5 Studies):
  - **NO BENEFIT when using RPM**
- Hospitalization (6 Studies):
  - A 9.6% mean decrease in hospitalization favoring RPM
  - **NO DIFFERECNE in pooled weighted mean differences - hazard ratios**
- Mortality (16 Studies):
  - A 3% mean decrease in all-cause mortality from RPM
  - **NO DIFFERENCE in pooled hazard ratios (5 studies)**

Iqbal FM, et al: **Clinical outcomes of digital sensor alerting systems in remote monitoring: a systematic review and meta-analysis**. *NPJ Digital Medicine* 2021

UCDAVIS HEALTH

Meta-Analysis of RPM on High-Risk Patients

- Review to determine if RPM reduces acute hospital use
- From 2,050 studies, 91 included.
  - Reduced admissions in 49% of studies (n=44/90)
  - Reduced length of stay in 49% of studies (n=23/47)
  - Reduced ED presentations in 41% of studies (n=13/32)
  - **Four studies reported RPM increased acute care use**
  - RPM of COPD was more effective at reducing emergency presentation than RPM of other disease conditions
  - Invasive monitoring of CV disease was more effective at reducing hospital admissions versus other non-invasive monitoring

UC DAVIS HEALTH

Taylor ML, et al: **Does remote patient monitoring reduce acute care use?** A systematic review. *BMJ Open* 2021

Commercial Insurance Coverage of RPM

- **UnitedHealthcare (commercial + MA)**
  - Moving to a very narrow covered list; “reasonable and necessary” only for:
    Heart failure, Hypertensive disorders of pregnancy (HDP)
  - NOT reasonable/necessary for other common uses:
    OSA, Diabetes, COPD, anxiety/depression, and non-pregnancy hypertension
- **Cigna**
  - Covers RPM only for a defined diagnosis list, medically necessary only for:
    COPD, Diabetes, Gestational DM, CHF, hypertensive disorders of pregnancy
  - RPM is not covered for any other indication, including isolated hypertension
  - Remote Therapeutic Monitoring (RTM) (98975–98981, etc.) is not covered/reimbursable for any indication.
- **CareFirst BlueCross BlueShield**
  - RPM as medically necessary for non-surgical patients with:
    CHF, chronic hypertension, COPD, CKD, COVID-19 infection

UC DAVIS HEALTH

Telehealth is so good….

- Telehealth requires more time and effort
- Telehealth can sometimes *increase* utilization
- Telehealth can sometimes have *negative* outcomes
- Telehealth can sometimes *worsen* inequities



UC DAVIS HEALTH

Making RPM More Effective

- Analyzed 91 studies included in systematic review 2015–2020
- 31 factors emerged that impact the effectiveness of RPM. These were synthesized into six theories of intervention success:
  1. Targeting populations at high risk
  2. Accurately detecting a decline in health
  3. Providing responsive and timely care
  4. Personalizing care
  5. Enhancing self-management
  6. Ensuring collaborative and coordinated care

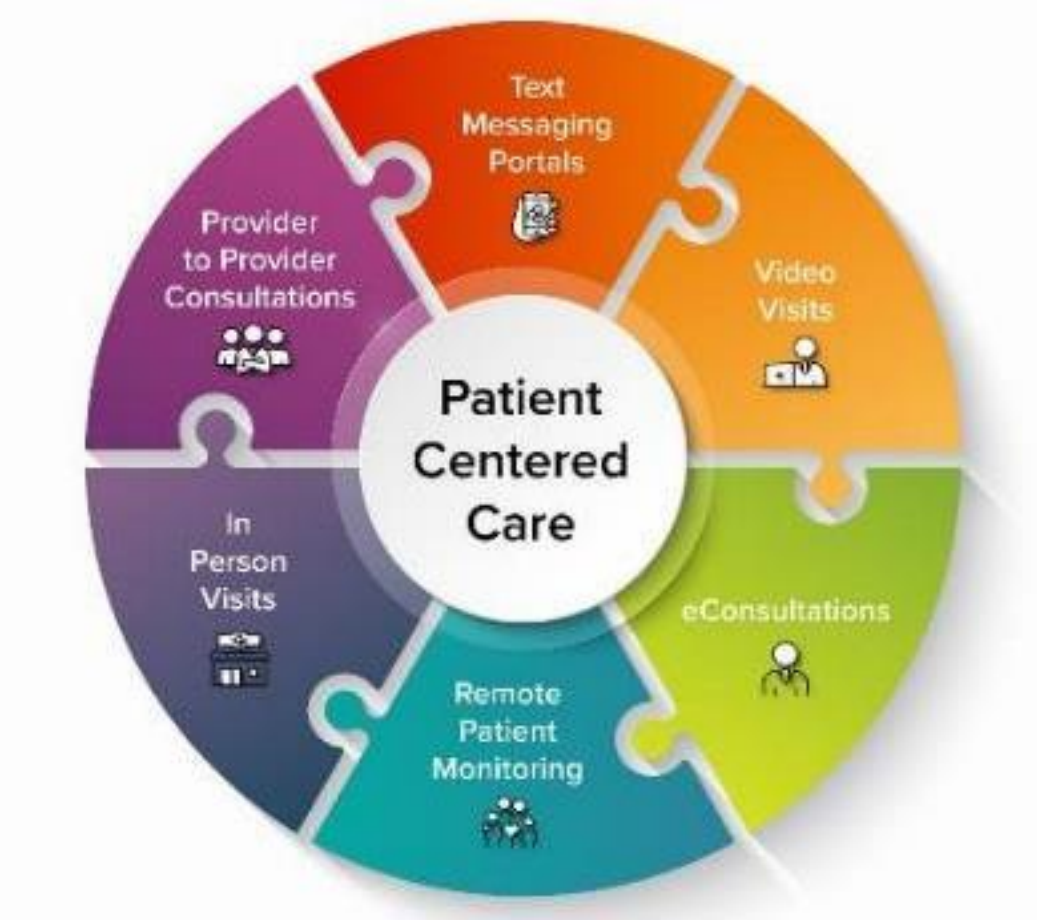
UC DAVIS HEALTH

Thomas EE, et al: **Factors influencing the effectiveness of remote patient monitoring interventions: a realist review**. *BMJ Open* 2021

Telehealth: Not a Replacement for In-person

The Right Patient, Modality, Condition, Circumstance

- Telephone
- eMessaging / Texting / eVisits
- eConsultations
- Video Visits (Provider-Patient)
- Telehealth Specialist Clinic (Prov-Prov)
- Asynchronous models of care
- Remote Patient Monitoring
- In Person Care



UCDAVIS HEALTH

Thank You!!



Jim Marcin
jpmarcin@health.ucdavis.edu

UCDAVIS HEALTH

MINNESOTA STRONG

Pediatric Tele-Emergency Consultations

- Using telemedicine to improve communication during paediatric resuscitations. J Telemed Telecare. 2005. PMID: 16035970
- Impact of critical care telemedicine consultations on children in rural emergency departments, Crit Care Med. 2013. PMID: 23921273
- Telemedicine consultations and medication errors in rural emergency departments, Pediatrics. 2013. PMID: 24276844
- The Impact of Telemedicine Intensivist Support and a Pediatric Hospitalist Program on a Community Hospital. Telemed J E Health. 2013; PMID: 23937510
- Economic evaluation of pediatric telemedicine consultations to rural emergency departments, Med Decis Making. 2015
- Appropriateness of Disposition Following Telemedicine Consultations in Rural Emergency Departments. Pediatr Crit Care Med 2015. PMID: 25607743.
- Impact of Telemedicine on Severity of Illness and Outcomes Among Children Transferred From Referring Emergency Departments to a Children's Hospital PICU. Pediatr Crit Care Med. 2016. PMID: 27099972
- Impact of Tele-Emergency Consultations on Pediatric Interfacility Transfers: A Cluster-Randomized Crossover Trial. JAMA Netw Open. 2023. PMID: 36780158
- Telemedicine vs Telephone Consultations and Medication Prescribing Errors Among Referring Physicians: A Cluster Randomized Crossover Trial. JAMA Netw Open. 2024. PMID: 38421649

UC DAVIS HEALTH

Pediatric Tele-NICU Consultations

- The availability of telecardiology consultations and transfer patterns from a remote neonatal intensive care unit, J Telemed Telecare. 2008. PMID: 18632999
- The Use of Telemedicine to Address Disparities in Access to Specialist Care for Neonates. Telemed J E Health. 2018. PMID: 30394853
- Impact of a Parent Video Viewing Program in the Neonatal Intensive Care Unit. Telemed E Health. 2020. PMID: 32985954
- The Impact of Telemedicine on Transfer Rates of Newborns at Rural Community Hospitals. Acad Pediatr. 2020. PMID: 32081766
- Economic Evaluation of Telemedicine Consultations to Reduce Unnecessary Neonatal Care Transfers. J Pediatr. 2022. PMID: 35074308
- Bonding, Relaxation, Separation, and Connection: Expressing Human Milk While Videoconferencing with the Hospitalized Premature Infant. Breastfeed Med. 2022. PMID: 35605051
- Virtual Family-Centered Hospital Rounds in the Neonatal Intensive Care Unit: Protocol for a Cluster Randomized Controlled Trial. Trials. PMID: 37194089
- Protocol for a single-arm feasibility trial of virtual family-centered rounds: increasing opportunities for family engagement among caregivers with language preference other than English. Pilot Feasibility Stud, 2025. PMID: 39940014
- NICU Virtual Family-Centered: A Cluster Randomized Controlled Trial. Pediatrics. [in press]

UCDAVIS HEALTH

Pediatric Tele-Hospitalist-ICU Consultations

- Use of telemedicine to provide pediatric critical care inpatient consultations to underserved rural Northern California. J Peds, 2004. PMID: 15001947
- The use of telemedicine to provide pediatric critical care consultations to pediatric trauma patients admitted to a remote trauma intensive care unit: a preliminary report. Pediatr Crit Care Med 2004; PMID: 15115563
- Financial Benefits of a Pediatric Intensive Care Unit Based Telemedicine Program to a Rural Adult Intensive Care Unit: Impact of Keeping Acutely Ill and Injured Children in Their Local Community. Telemed J E Health, 2005. PMID: 23570207
- Complex bioethics consultation in rural hospitals: using telemedicine to bring academic bioethicists into outlying communities. J Telemed Telecare 2009. PMID: 19590034
- Connecting Hospitalized Patients with Their Families: Case Series and Commentary. Int J Telemed Appl. 2011. PMID: 22121359
- The Financial Impact of a Pediatric Telemedicine Program: A Children's Hospital's Perspective. Telemed J E Health. 2013. PMID: 23837516
- Videoconferencing to reduce stress among hospitalized children. Pediatrics. 2014. PMID: 24982102
- Economic evaluation of telemedicine for patients in intensive care units. Crit Care Med. 2016. PMID: 26540398
- Telemedicine for Interfacility Nurse Handoffs. Pediatr Crit Care Med. 2019. PMID: 31232857
- Nurse-to-family telehealth for pediatric transfers: protocol for a feasibility and pilot cluster randomized controlled trial. Pilot Feasibility Stud. 2023. PMID: 37041600

UC DAVIS HEALTH

Pediatric Provider-to-Provider Consultations

- Using telemedicine to provide pediatric subspecialty care to children with special health care needs in an underserved rural community, Pediatrics. 2004. PMID: 14702439
- Perceptions of Local Health Care Quality in 7 Rural Communities with Telemedicine. J Rural Health, 2005. PMID: 15667014
- Changes in Diagnosis, Treatment, and Clinical Improvement Among Patients Receiving Telemedicine Consultations. Telemed J E Health. 2005. PMID: 15785219
- Using Telemedicine to Improve the Care Delivered to Sexually Abused Children in Rural, Underserved Hospitals. Pediatr 2009. PMID: 19117886
- Impact of telemedicine on the quality of forensic sexual abuse examinations in rural communities. Child Abuse Negl. 2014. PMID: 24841062
- The Use of Telemedicine to Address Access and Physician Workforce Shortages. Pediatrics, 2015. PMID: 26122802
- Reducing Loss to Follow Up with Tele-Audiology Diagnostic Evaluations. Telemed J E Health. 2015. PMID: 26544032
- Geospatial Information System Analysis of Healthcare Need and Telemedicine Delivery in California. Telemed J E Health. 2017. PMID: 27835073
- Impact of a University-Based Outpatient Telemedicine Program on Time Savings, Travel Costs, and Environmental Pollutants. Value Health. 2017. PMID: 28407995
- Home-based video visits for pediatric patients with poorly controlled type 1 diabetes. J Telemed Telecare. 2019 PMID 30871408
- Appointment completion in pediatric neurology telemedicine clinics serving underserved patients. Neurol Clin Pract. 2019. PMID: 31583186
- Hospital Utilization Among Rural Children Served by Pediatric Neurology Telemedicine Clinics. JAMA Netw Open. 2019; PMCID: PMC6704740
- Video "Home Visits" for Children and Adolescents with Uncontrolled Type 1 Diabetes. Diabetes Technol Ther. 2019. PMID: 31448952
- Travel, Time, and Cost Savings Associated with a University Medical Center's Video Medical Interpreting Program. Telemed J E Health. 2020. PMID: 32045323
- School-Based Telemedicine Interventions for Asthma: A Systematic Review. Acad Pediatr. 2020. PMID: 32446856
- Impact of telemedicine on visit attendance for paediatric patients receiving endocrinology specialty care. J Telemed Telecare. 2020. PMID: 33226895
- Telemedicine use for pediatric asthma care: a mixed methods study. Journal of Asthma, 2022. PMID: 34913803
- Parent Experience and Cost Savings Associated With a Novel Tele-physiatry Program for Children Living in Rural and Underserved Communities. Arch Phys Med Rehabil. 2022. PMID: 34425088
- Patient Satisfaction with Care Providers During the Covid-19 Pandemic: An Analysis of CAHPS® Survey Scores for In-Person and Telehealth Encounters at an Academic Medical Center. Telemed J E Health. 2023. PMID: 36595515
- Environmental Impact of Ambulatory Telehealth Use by a Statewide University Health System During COVID-19. Telemed J E Health. 2022. PMID: 36576982
- PNEI ISSUE Pilot implementation of a computer-based training course on newborn hearing screening and teleaudiology among primary healthcare providers in low resource settings. Acta Medica Philippina. Sept 2023
- PGF: PNEI ISSUE Pilot implementation of a community-based, eHealth-enabled service delivery model for newborn hearing screening and intervention in the Philippines: A community-based, eHealth enabled service delivery model for newborn hearing screening and intervention in the Philippines. Acta Medica Philippina. 2023
- Patient and Parent Experience with Pediatric Care Providers During the COVID-19 Pandemic: A Comparison of Press Ganey Survey Scores for Telehealth and In-Person Encounters. Telemed J E Health. 2024. PMID: 38512471
- Parent, physician, and therapist experience of in-person, hybrid, and all-virtual models of physiatry care for children with special healthcare needs. Acad Pediatr. 2024. PMID: 38719092

UC DAVIS HEALTH

Evaluation of Other Telehealth Applications

- Organizational and Teamwork Factors of Tele-Intensive Care Units. Am J Crit Care. 2016. PMID: 27587424
- Telemedicine in Greenland: Citizens' Perspectives. Telemed J E Health. 2016. PMID: 27813719
- Selected Use of Telemedicine in Intensive Care Units Based on Severity of Illness Improves Cost-Effectiveness. Telemed J E Health. 2017. PMID 28661790
- Acceptability, Usability, and Effectiveness: A Qualitative Study Evaluating a Pediatric Telemedicine Program. Acad Emerg Med. 2019. PMID: 30974004
- Emergency Medicine Physicians' Perceptions of Pediatric Tele-Emergency Services. Telemed J E Health. 2019. PMID: 31621515
- Expert Consensus: Telehealth Skills for Health Care Professionals. Telemed E Health. 2020; PMID: 33236964
- Paediatric tele-emergency care: A study of two delivery models. J Telemed Telecare. 2021. PMID: 30966860
- Barriers and facilitators for implementing paediatric telemedicine: rapid review of user perspectives. Front Pediatr. 2021. PMID: 33816401
- Primary Care Physician Adherence to Telepsychiatry Recommendations: Intermediate Outcomes from a Randomized Clinical Trial. Telemed J E Health. 2021. PMID: 34726542
- Use of Telehealth Across Pediatric Subspecialties Before and During the COVID-19 Pandemic. JAMA Netw Open. 2022. PMID: 35357455
- Emergency Departments' Uptake of Telehealth for Stroke Versus Pediatric Care: Observational Study. J Med Internet Res; 2022. PMID: 35723927
- Managing Innovation: A Qualitative Study on the Delivery of Telehealth Service in Rural Emergency Departments. BMC Health Serv Res. 2022. PMID: 35780165
- Enhancing the Implementation of the Virtual Pediatric Trauma Center using PRISM: A Mixed Methods Study. Telemed Reports. Telemed Reports, Aug 2022. PMID: 36185467
- Perceived Drivers of Telehealth Use by Pediatric Endocrinologists and Neurologists. Acad Pediatr. 2022. PMID: 35940573
- Enhancing the Implementation of the Virtual Pediatric Trauma Center Using Practical, Robust, Implementation and Sustainability Model: A Mixed-Methods Study. Telemed Rep. 2022. PMID: 36185467
- Comparison of in-person vs. telebehavioral health outcomes from rural populations across America. BMC Psychiatry. 2022 Dec 10;22(1):778. PMID: 36496352. PMCID: PMC9736702
- Measuring the impact of a "Virtual Pediatric Trauma Center" (VPTC) model of care using telemedicine for acutely injured children versus the standard of care: study protocol for a prospective stepped-wedge trial. Trials. 2022. PMID: 36575536
- Comparison of telehealth and in-person behavioral health services and payment in a large rural multisite usual care study. Telemed J E Health. 2023. PMID: 37036816
- Change in Drug Use Disorders Identification Test - Consumption (DUDIT-C) with Telehealth Treatment Compared to In-Person Treatment. Substance Use and Misuse. 2023. PMID: 37217828
- Comparison of treatment modality crossovers in telehealth and in-person behavioral health treatment in rural communities. Telemed J E Health. 2023. PMID: 37751202
- Telehealth and in-person behavioral health services in rural communities before and during the COVID-19 pandemic: A multi-site study. JMIR Ment Health. 2023. PMID: 37721793
- Adapting telehealth to address health equity: Perspectives of primary care providers across the United States. J Telemed Telecare. 2024. PMID: 38515372
- Advancing Equitable Ambulatory Telehealth through Dashboard Development. Telemedicine Reports. July 2024. PMID: 39205676 PMCID: PMC11347865.
- Tele-Psychiatry to Address Severe Persistent Mental Health in Rural Communities: An Economic and Break-Even Analysis. Journal of Mental Health and Clinical Psychology. 2024.
- Differences in behavioral health treatment among rural American clinics utilizing in person and telehealth treatment modalities. Journal of Technology in Behavioral Science. 2024.
- From Surviving to Thriving: A Qualitative Study of Adapting Telehealth Systems for Specialty Diabetes Care Across Four California Medical Centers. Clin Diabetes. 2024. PMID: 39429444
- Health Perceptions and Practices of a Telewellness Fitness Program: Exploratory Case Study. JMIR Form Res 2024. PMID: 39622679

UC DAVIS HEALTH