

Access the entire webinar series here:

<https://files.asprtracie.hhs.gov/documents/aspr-tracie-healthcare-system-preparedness-considerations-speaker-series-summary.pdf>

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T R A C I E

HEALTHCARE EMERGENCY PREPAREDNESS
INFORMATION GATEWAY

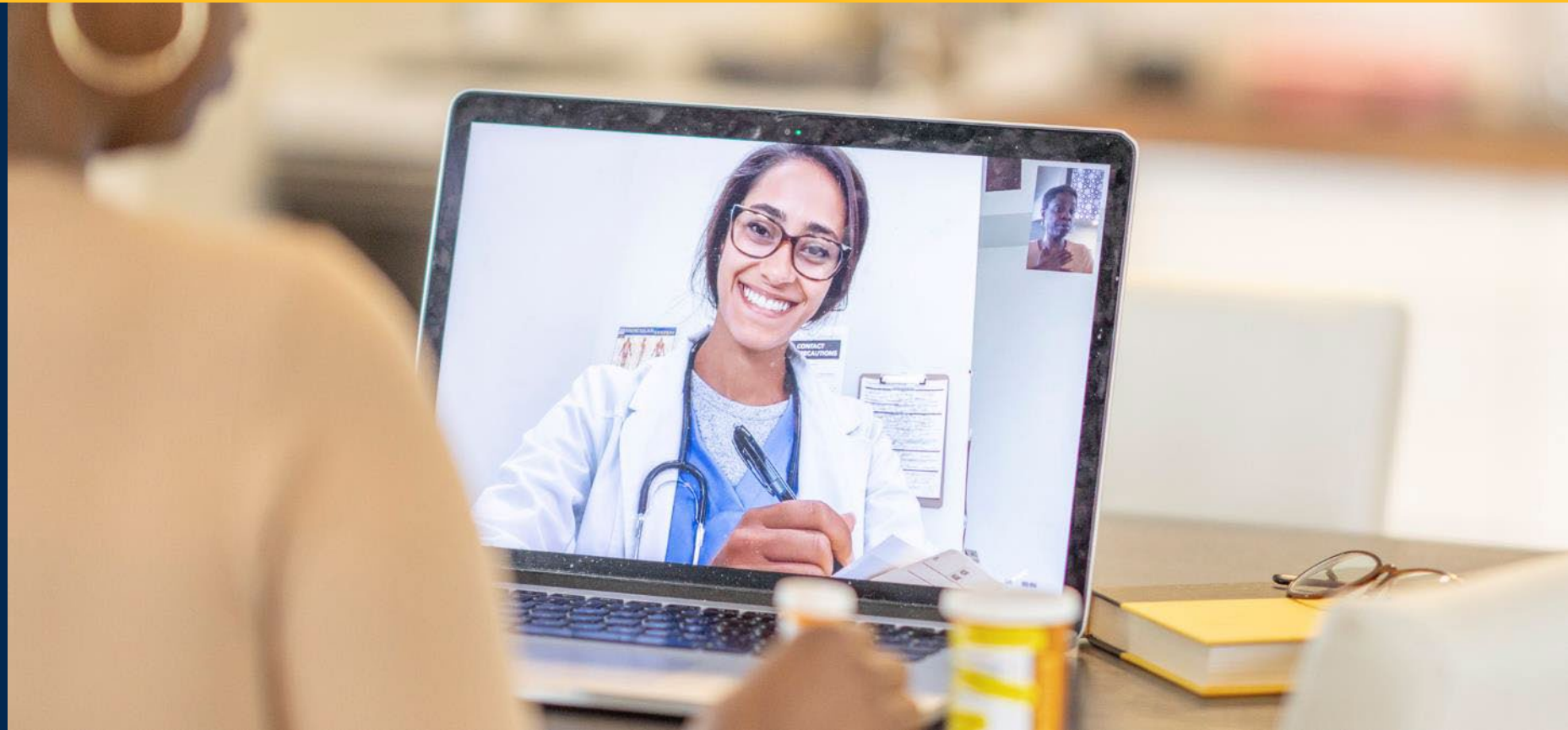
Healthcare System Preparedness Considerations Speaker Series

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Telehealth in Disaster Preparedness and Response

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UC Davis Health

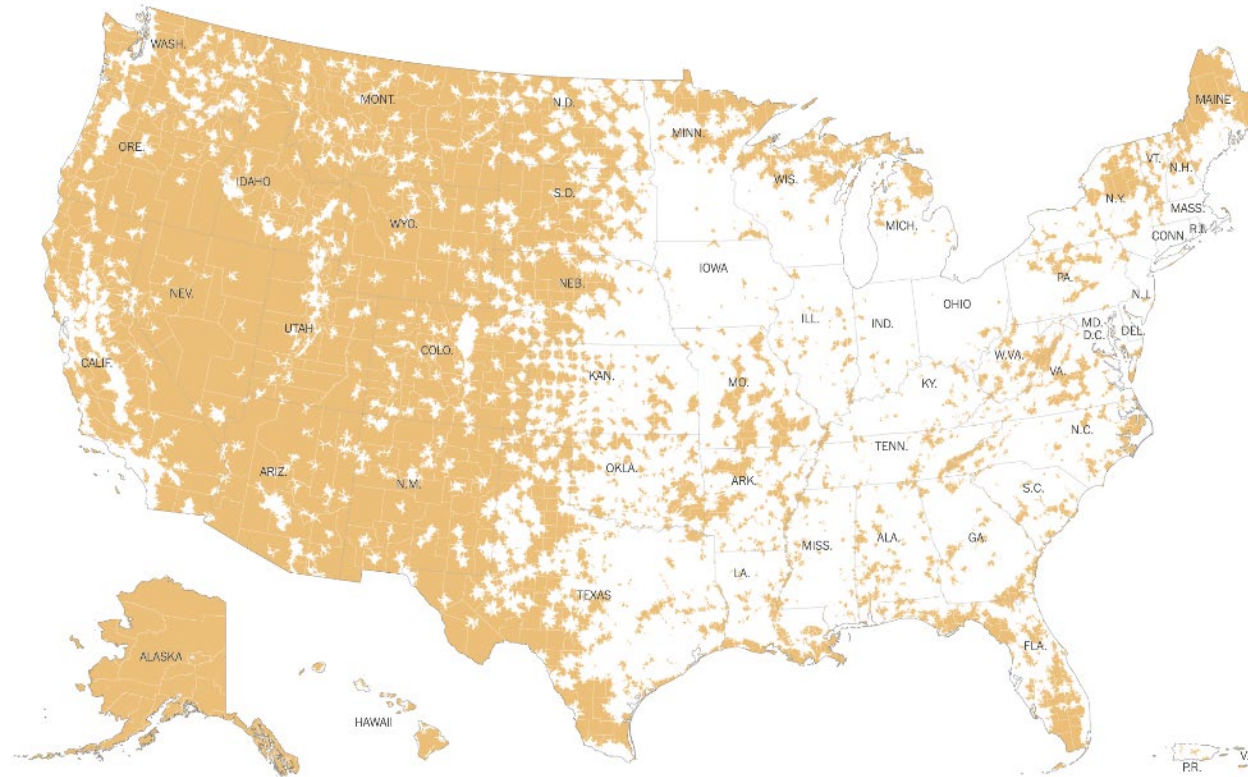


Disclosures

No Conflict of Interest to Report



Telehealth: Geography & Distance Barriers



>30-minute drive to nearest hospital
~35 million people in the USA
10% of US Population

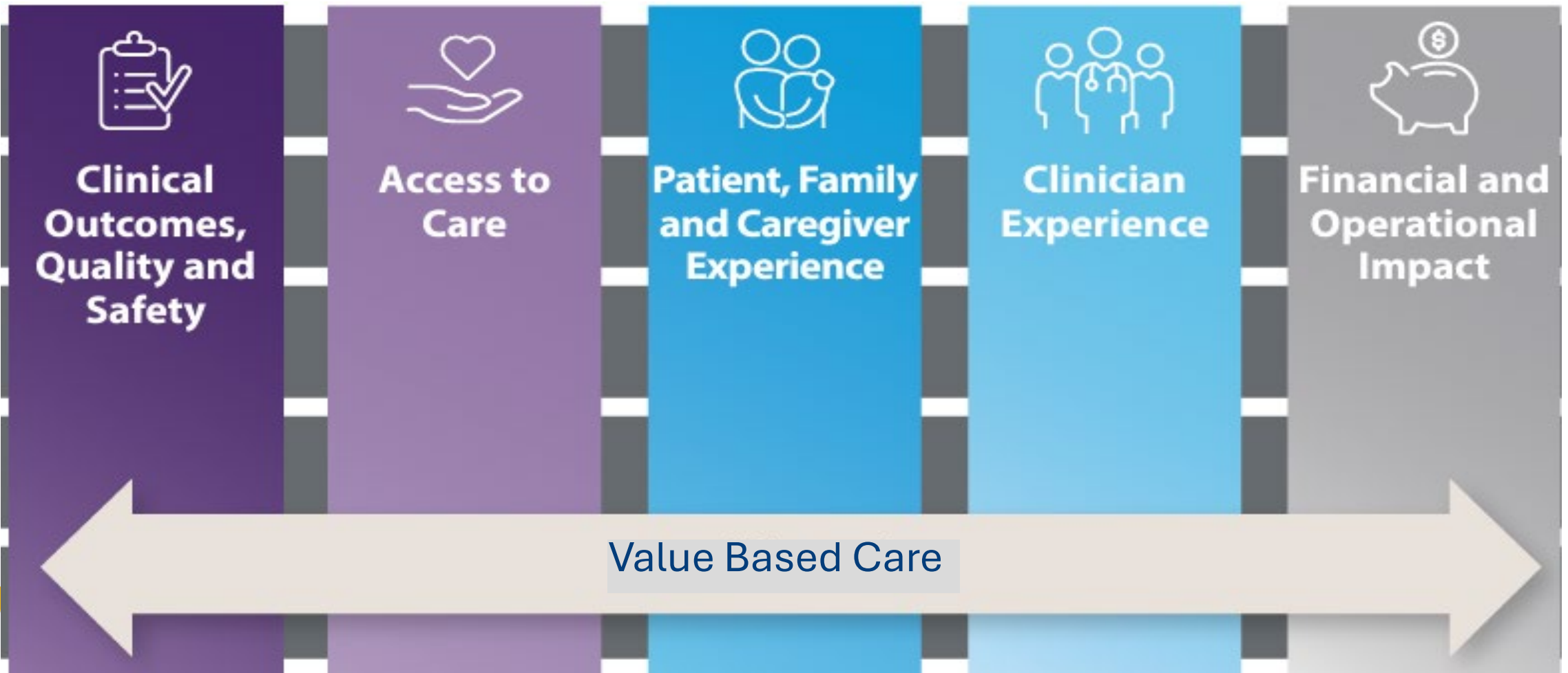
Access To Children's Hospitals

- 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)



Value Based Care and Telehealth

AMA: Return on Health: Moving Beyond Dollars and Cents
in Realizing the Value of Virtual



Telehealth in Disaster Response

Connecting patients, providers, and resources to deliver the right care, in the right place, at the right time.

1

Triage of Remote Patients



- Remote assessment via phone or video
- Standardized protocols to prioritize patients
- Direct patients to the right level of care

2

Transport to Receiving Hospital



- Share clinical information with transport teams
- Recommend stabilization and en route care
- Notify receiving hospital and share ETA

3

Support of Receiving Hospitals



- Specialist consultations
- Clinical guidance and decision support
- Surge capacity and resource management

4

Interfacility Transfer Support



- Coordinate transfers between facilities
- Share patient data securely
- Ensure the right patient goes to the right place

5

Direct Patient Care (When Hospital Access Is Not Possible)

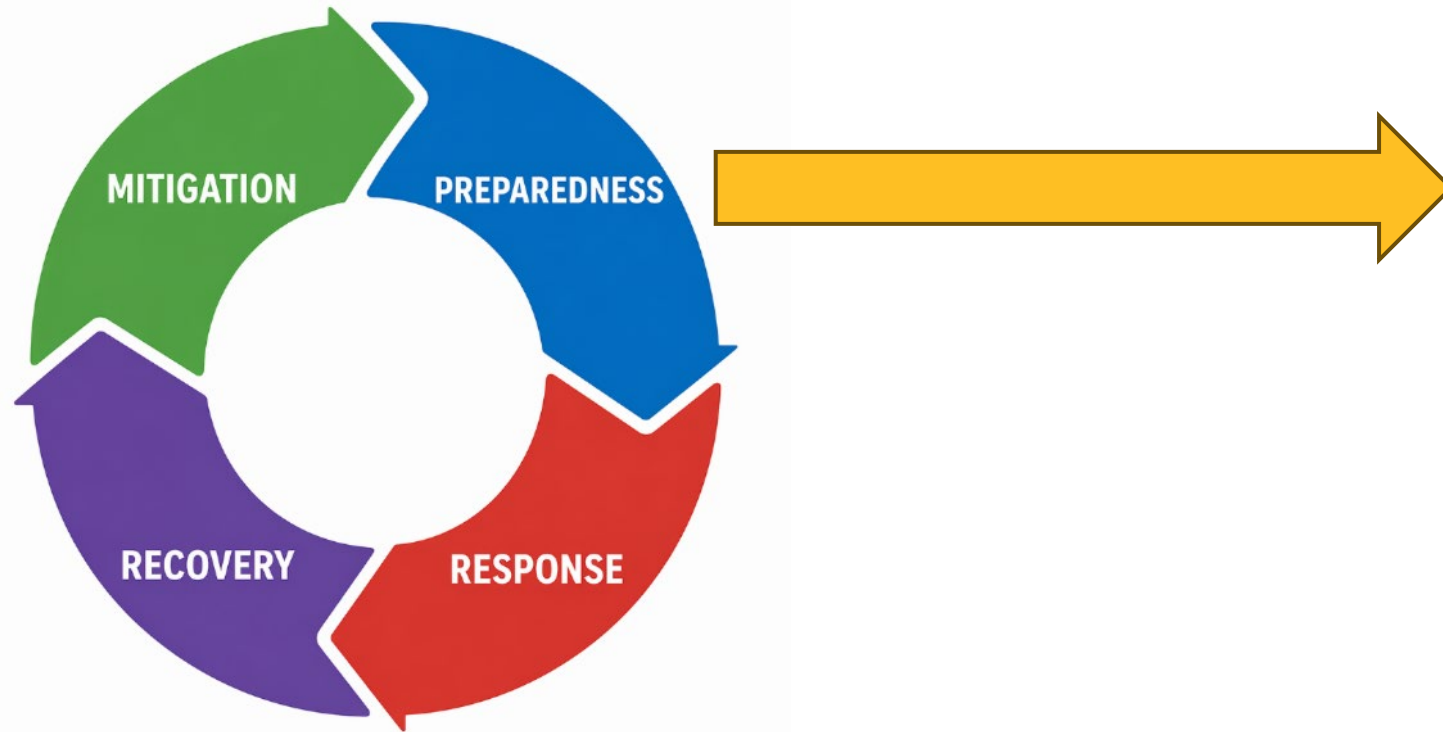


- On-site assessment and diagnosis
- Treatment guidance and prescriptions
- Monitor chronic conditions
- Mental health support and follow-up

Telemedicine CAN and HAS Worked in Disaster Response

- 2017: Hurricane Irma – Direct to Consumer (pediatrics)
- 2017: Hurricane Maria – Puerto Rico / NY Presbyterian
- 2018: Hurricane Florence – Shelter telehealth North Carolina
- 2018: Camp Fire – Paradise, CA / UC Davis
- **2020: COVID-19 Pandemic**
- 2023: Maui Fire – Mental Health – “Hawai’i UTelehealth”
- 2025: LA Fires (WRAP-EM Mental Health)
- International Experiences (Australia; Médecins Sans Frontières)

Telehealth in Disaster Preparedness and Response



National Emergency Tele-Critical Care Network (NETCCN)

- HHS-ASPR → Telemedicine and Advanced Technology Research Center (TATRC) with SCCM



Specialty Services



Relief Coverage



Tiered Staffing^[1]



eConsult

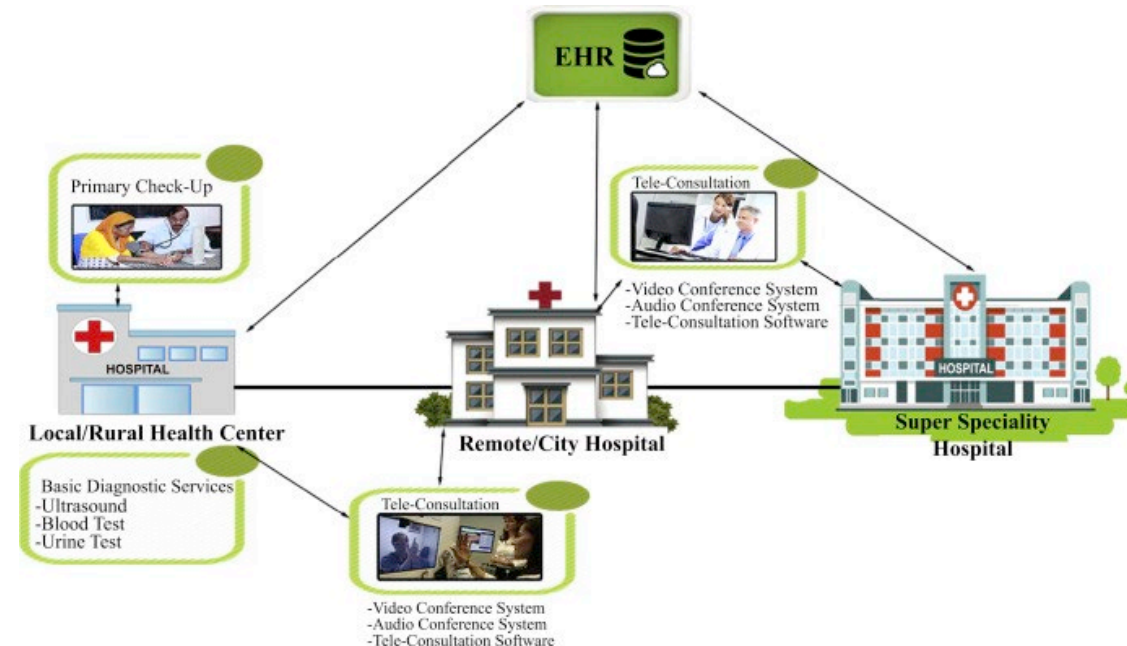


Remote Home
Monitoring

- NETCCN provided services in 15 states and 2 US territories
- 131 requests → activated in 60 sites (46%)
- 1,863 days of coverage
- “...most time-consuming activity between request and activation was local credentialing...” mean 23 days.

Proof of Concept: Connectivity Tests in California

- Many hospitals have their own telehealth network
 - Tests conducted between Regional Children's Hospitals (2023)
-
- 6 California Children's Hospitals
 - None could be immediately connected
 - All required support from IT and/or Telehealth Team

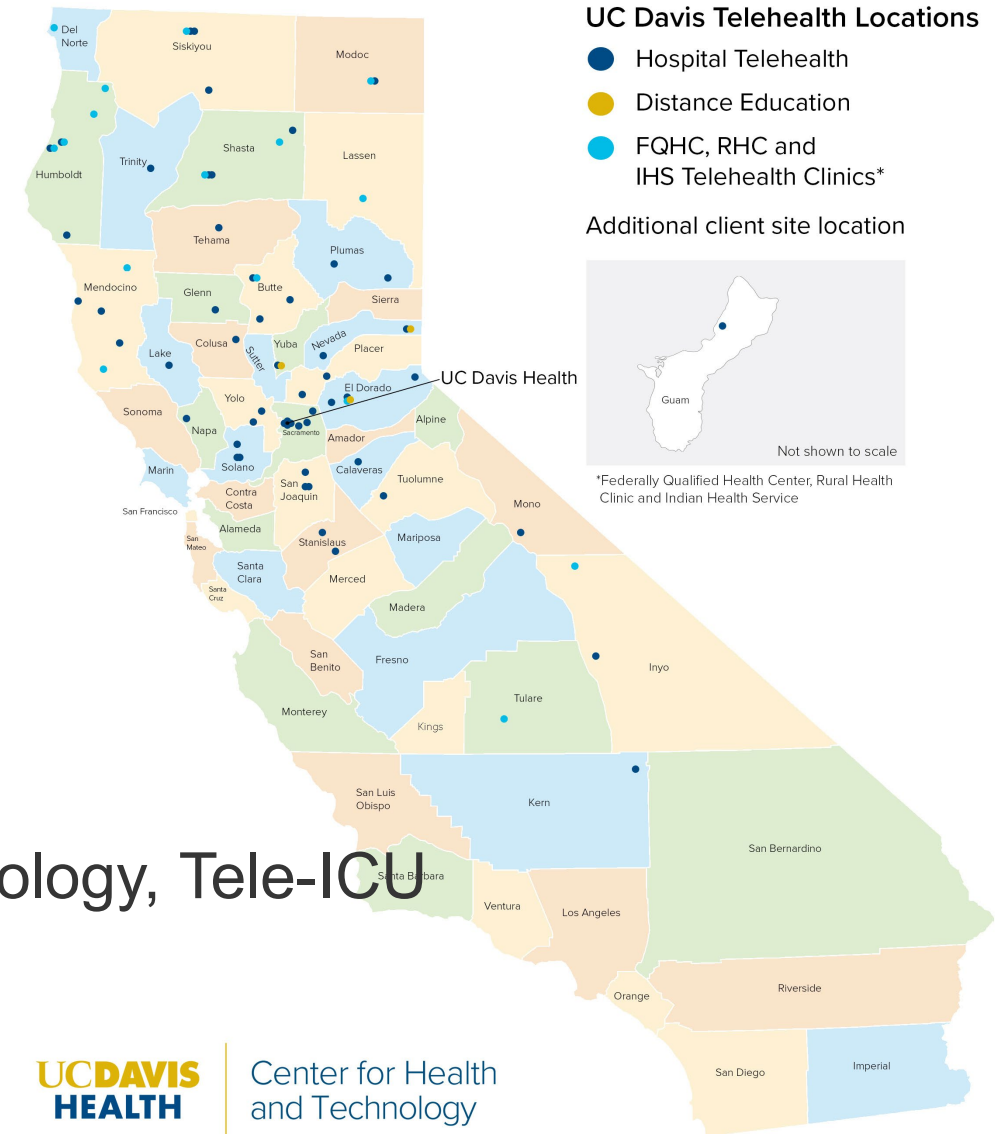


UC Davis Telehealth

- Ambulatory Telehealth
 - E-Consultation
 - Video Visit Program
 - Remote Patient Monitoring
 - Provider-to-Provider
 - 18 FQHC/IHS and jail site contracted services
- Inpatient Telehealth
 - 42 Hospital service agreements
 - Tele-peds, Tele-stroke, Tele-trauma, Tele-nephrology, Tele-ICU
- Established operations, contracts

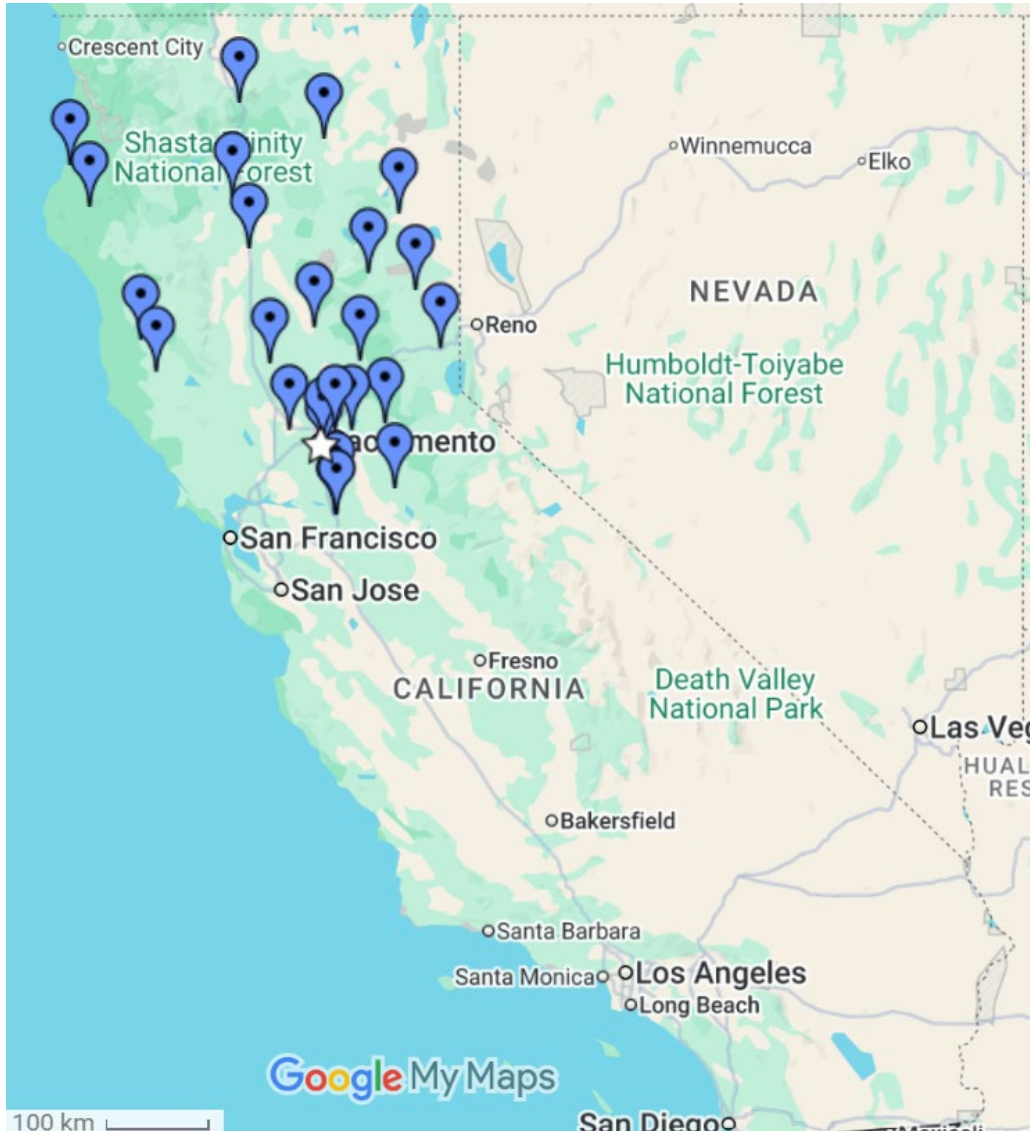


Telehealth Services



Center for Health
and Technology

Pediatric Tele-Emergency



- **“Everyday Readiness”**
- 32 sites (rural focus)
- Pediatric ICU
- Pediatric Hospitalist
- Neonatology

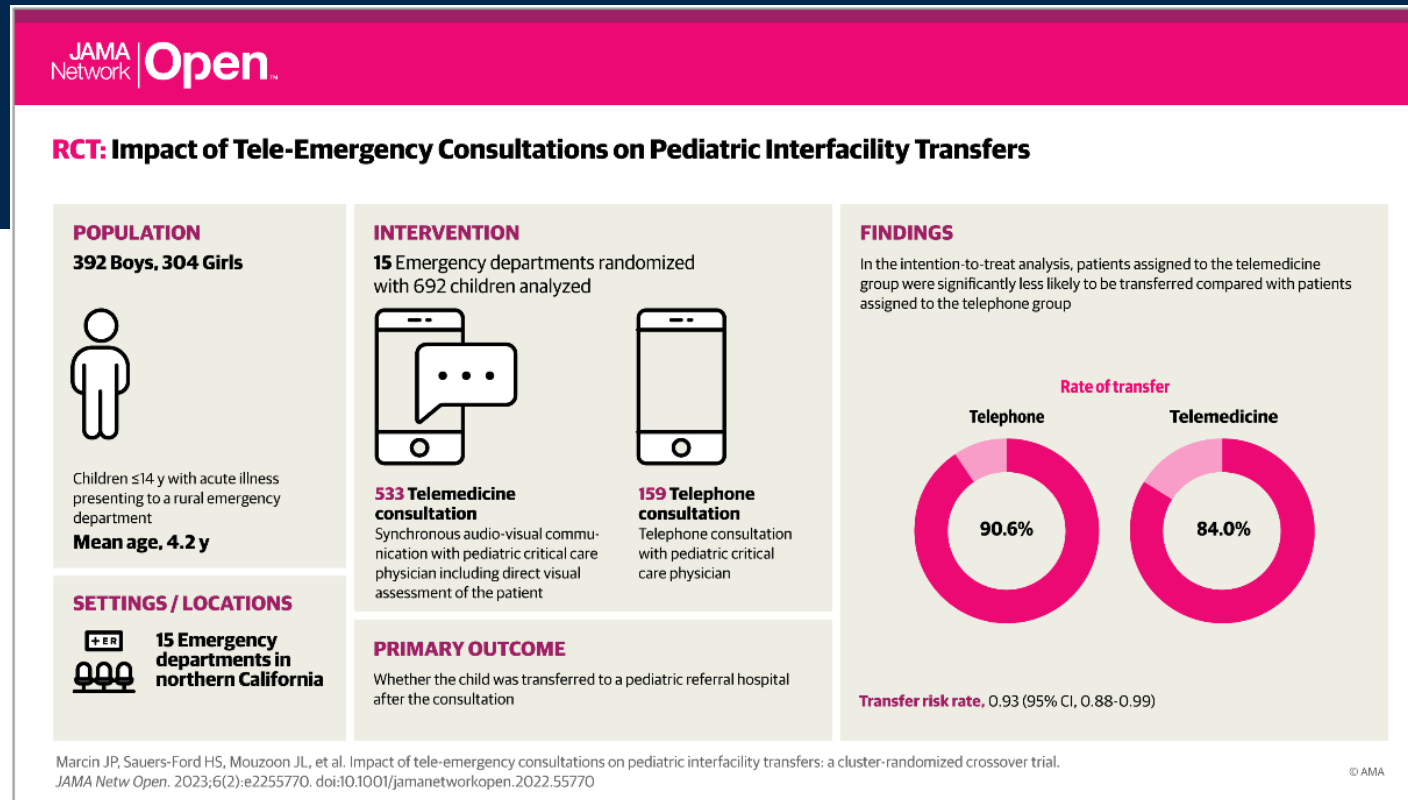
- ~10% use rate per patient
 - Immediate care to the seriously ill
 - Assist in caring for less seriously ill

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

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.

Virtual Pediatric Trauma Center (VPTC)

- 11 Hospitals – Pediatric Trauma
- Stepped wedge design (2022-2024)
- Intervention: Telehealth following phone-phone (Trauma NP)
- Primary Outcome: Parent experience of care (3-days)
- Qualitative interviews
- 595 injured children
 - 369 assigned to VPTC
 - 226 assigned to standard of care

Virtual Pediatric Trauma Center (VPTC)

Parent Experience of Care

- “When your child left this hospital” – Significantly Improved

Transfer Rates

- 93.8% telephone - 91.6% telemedicine
- OR 0.59 (95%CI: 0.16-2.16)

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

Proof of Concept: Use Following Camp Fire California

- Established Pediatric Tele-Emergency Network (N=32 Hospitals)
- The Camp Fire started on November 8, 2018
- It burned 153,336 acres
- It destroyed nearly 19,000 buildings
- It killed at least 85 people
- It displaced more than 50,000 people
- It caused an ~ \$16.5 billion in damage



Disaster Telemedicine Programs

- ASPR Strategic Goals (2026-2029)
 - Goal #3: Execute Rapid, Efficient, and Adaptive Federal Response
 - Focus Area: “Promoting Disaster Telemedicine Capabilities”
 - The ASPR Disaster Telemedicine Program
- Southern Regional Disaster Response System (SRDRS) - HHS Region IV
 - Disaster Virtual Care (DVC) models
 - Disaster Tele-EMS, Disaster Tele-Observation Medicine, Disaster Virtual ER-TV (Emergency Room - Telehealth Visit), MRC Telehealth Strike Team Model, and Disaster Virtual Care Model for Disaster Shelters
 - MRC Telehealth Strike Team Model: embedding portable telehealth capabilities into MRC units



Telehealth in Pre-Disaster Planning



- <https://telehealth.hhs.gov/providers/best-practice-guides/telehealth-emergency-preparedness>



Developing an emergency
preparedness strategy



Telehealth in Disaster Preparedness and Response

Conclusion:

- Telehealth has a role in disaster preparedness and response
- Not yet well integrated into plans and drills; Under deployed
- Time is now – “Everyday Readiness”
- Focus beyond acute scene – hospital care

Question & Answer



Contact ASPR TRACIE



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1-844-5-TRACIE



askasprtracie@hhs.gov

Appendix

The Disaster Digital Telemedicine Architecture

Platform:

- Cloud Based
- Centralized Dashboards
- Synch/Asynch
- EMR – HIE
- E-Scripts
- Interpretation Svs

Connectivity:

- First Net + Satellite

Equipment:

- Tablet, laptop, iPad
- Bluetooth peripherals

