

IMAGINING FUTURE RESILIENT AUTONOMOUS TELEHEALTH CONNECTIVITY STANDARDS FOR EMERGENCY MEDICINE AND DISASTER RESPONSE - IEEE P2795 IMPACTS

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A VIBRANT PARTNERSHIP EXISTS BETWEEN THE UNIVERSITY OF VIRGINIA (UVA) & MITRE, SPURRING MITRE LABS & UVA HEALTH INNOVATION HUB (IHUB)

LEARNING LAB

MITRE's sponsors bring challenges to the partnership and encourage MITRE engineers and UVA clinicians to explore ground-breaking approaches for care delivery via learning metrics and measures, telehealth and remote monitoring, medical cyber security, and shared analytics.

Enabling technology and data management innovation to improve medical care operations

- Create robust **connected healthcare ecosystem** that nurtures investigation, safety, and assessment for all aspects of healthcare operations
- Development of **powerful analytics** for improved predictive monitoring for critical illness
- Enable **effective sharing of analytics** for multi-center development
- Provide **frameworks** for bringing effective tools to remote medical facilities
- Enable **remote patient monitoring** to reduce cost, improve patient healthcare experience

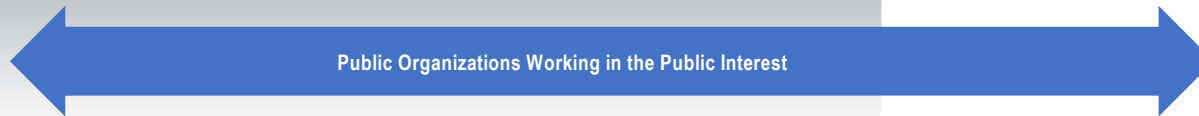


Partnership initiated in 2015

MITRE @ UVA
One Hospital Drive
Charlottesville Va 22908

Health Learning Lab Focus:

- Mobile Telehealth
- Shared Analytics
- Clinical Collaboration



MITRE@UVA SITE PARTNERSHIP HEALTH LEARNING LAB

Mission Focus and Impact – Smart Connected Care

The MITRE@UVA partnership continues to garner sponsor support and have impact across both the national security and public service sectors.

In collaboration with UVA and other academic and industry participants, MITRE engages military, veteran, civilian health, and other sponsors to leverage engineering approaches for:

- learning metrics and measures
- telehealth and remote monitoring
- medical cyber, and shared analytics

This activity focuses on reference platforms for both sensitive and non-sensitive experimentation, as well as standards studies spanning regulatory registries, clinical trials, wearables, garrison and expeditionary spaces, and clinical hospital and telehealth care needs.

Notable collaboration between MITRE and UVA includes:

- Partnering to scale, document, measure, and share telehealth services to vulnerable populations in response to the COVID-19 pandemic as well as provide provider wellness and resiliency tools
- Leading standards development with the IEEE Engineering in Medicine and Biology Society, resulting in the IEEE P2795 standard for sharing analytics
- Improving expeditionary health technology readiness through field exercises and mobile medical experimentation

https://www.mitre.org/sites/default/files/publications/MITRE_UVA_Fact_Sheet.pdf



UVA HEALTH AND MITRE HELP KEEP AT-RISK POPULATIONS SAFE FROM COVID-19

UVA Health and MITRE partnered to develop COVID Rapid Response Kits—a critical new tool for fighting the pandemic in Virginia. These kits, expanded telehealth capabilities, and remote monitoring are improving care for many vulnerable residents.



<https://www.mitre.org/publications/project-stories/uva-health-and-mitre-help-keep-at-risk-populations-safe-from-covid>

Building a Joint Learning Lab through Academic Engagement

MITRE's UVA site launched in 2015. Located on the grounds of the UVA School of Medicine and UVA Medical Center, it quickly became a hub for collaboration and experimentation. It includes a robust connected healthcare ecosystem that nurtures investigation, safety, and assessment for all aspects of healthcare operations.

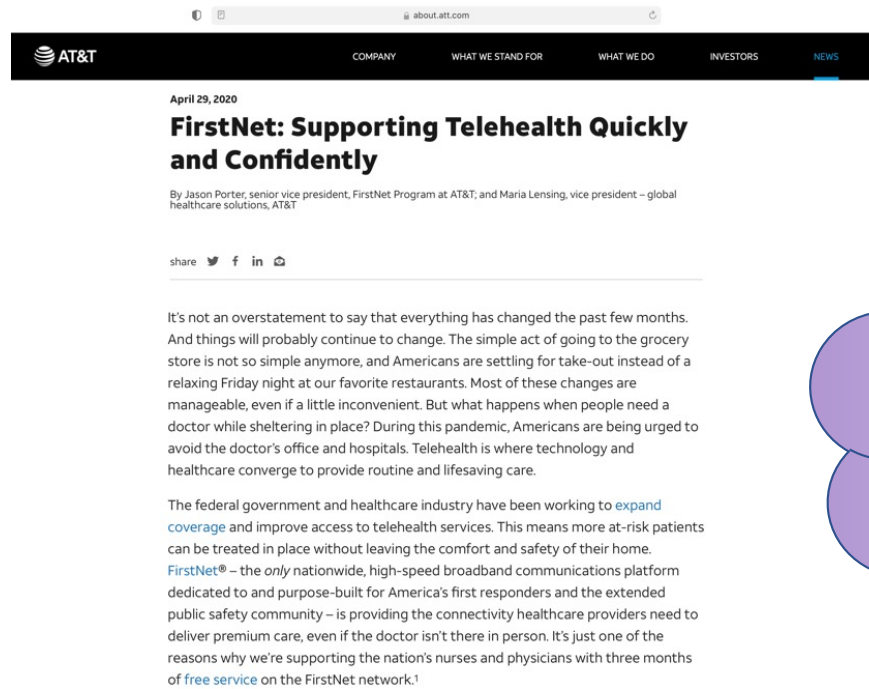
UVA HEALTH AND MITRE - CREATING A TELEHEALTH BLUEPRINT

- "In just four short weeks, our partnership enabled a rapid response process for vulnerable populations," says David Cattell-Gordon, director of operations at the UVA Center for Telehealth. "This collaboration has already played an important role in helping save the lives of frail elderly during a major outbreak in skilled nursing facilities in our communities."
- The blueprint focuses on two main factors: communicating with isolated patients and delivering telehealth facilities and services to remote, at-risk groups. This approach enables medical teams to deliver ongoing care while continuing social distancing to reduce the load on health systems around the nation.
- COVID-19 poses challenges that require creative solutions for remote sensing, distributed surveillance, early detection, resource allocation, and resiliency planning. Since MITRE is using artificial intelligence to solve similar data and analytic challenges for national security, it was a natural fit to pivot this expertise to tackle the pandemic.

<https://www.mitre.org/publications/project-stories/uva-health-and-mitre-help-keep-at-risk-populations-safe-from-covid>

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Our shared commitment to public service enables us to overcome the barriers that inhibit the technology and data management innovation we need to improve medical care operations.
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IEEE P2795 IMPACTS: IMAGINING FUTURE RESILIENT AUTONOMOUS TELEHEALTH CONNECTIVITY STANDARDS FOR EMERGENCY MEDICINE AND DISASTER RESPONSE

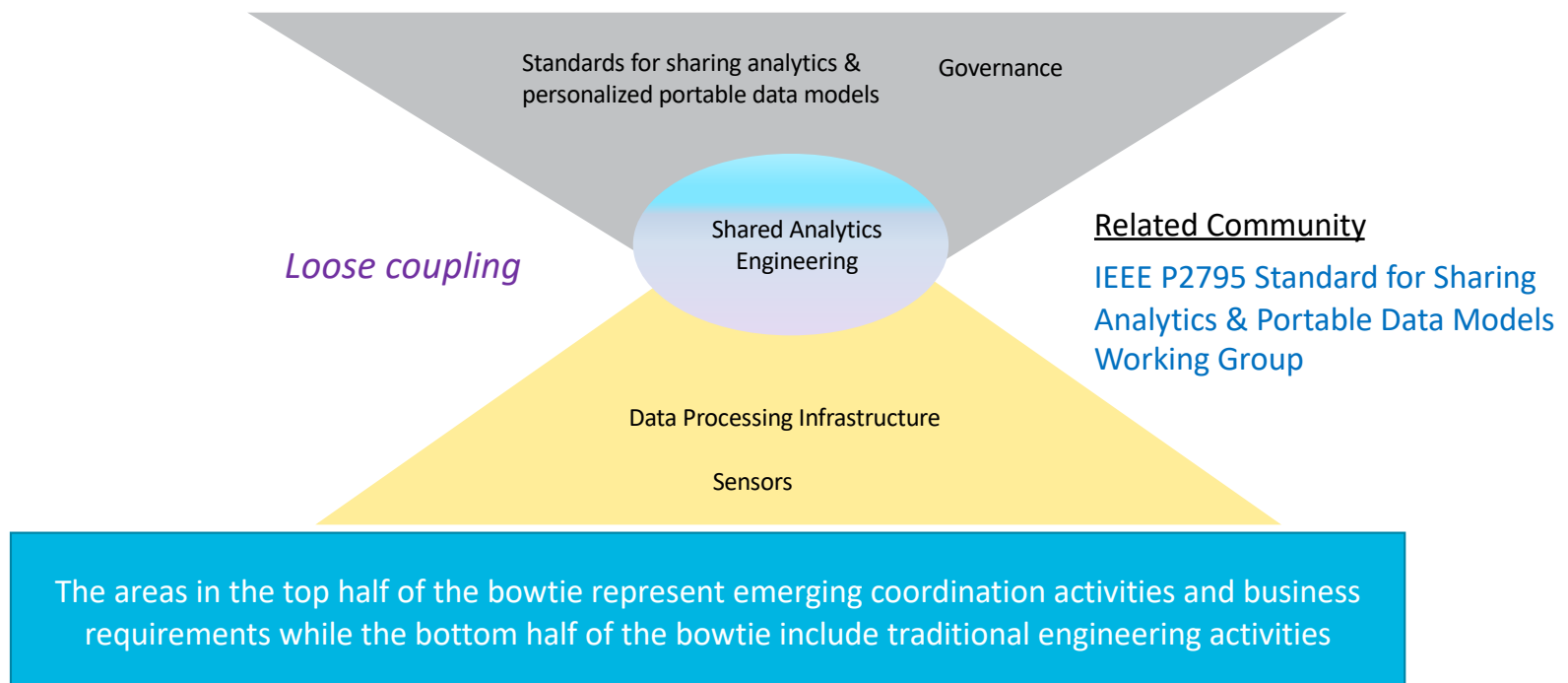


https://about.att.com/innovationblog/2020/04/fn_telehealth.html



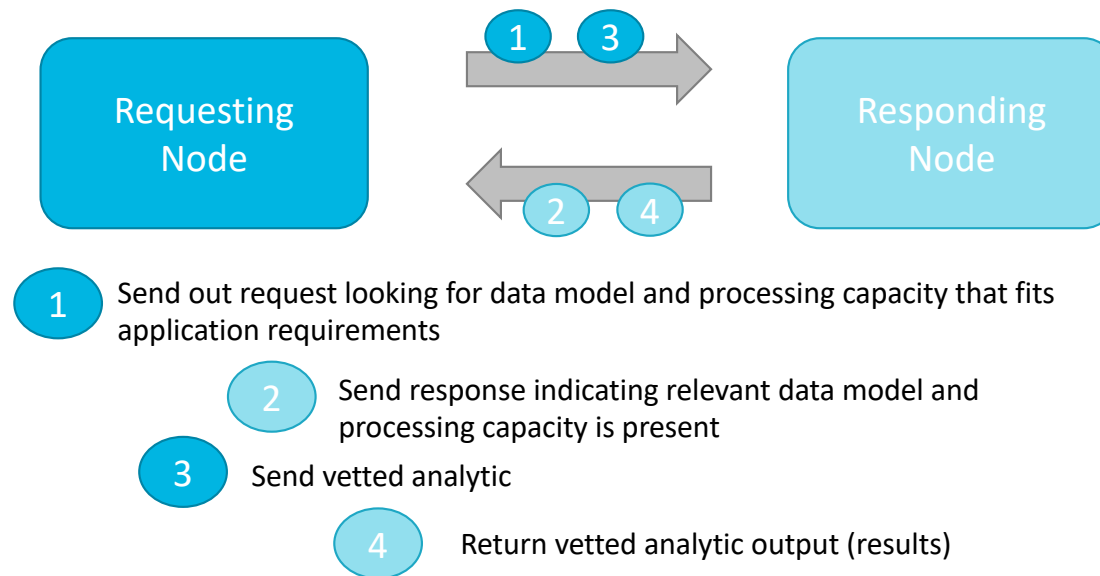
WHY STANDARDIZE HOW TO SHARE ANALYTICS AND PORTABLE DATA MODELS?

FORMING THE STANDARDS WORKING GROUP: EXPERIENCES LAUNCHING IEEE P2795



PROPOSED FOUR STEP IEEE P2795 ANALYTIC EXCHANGE

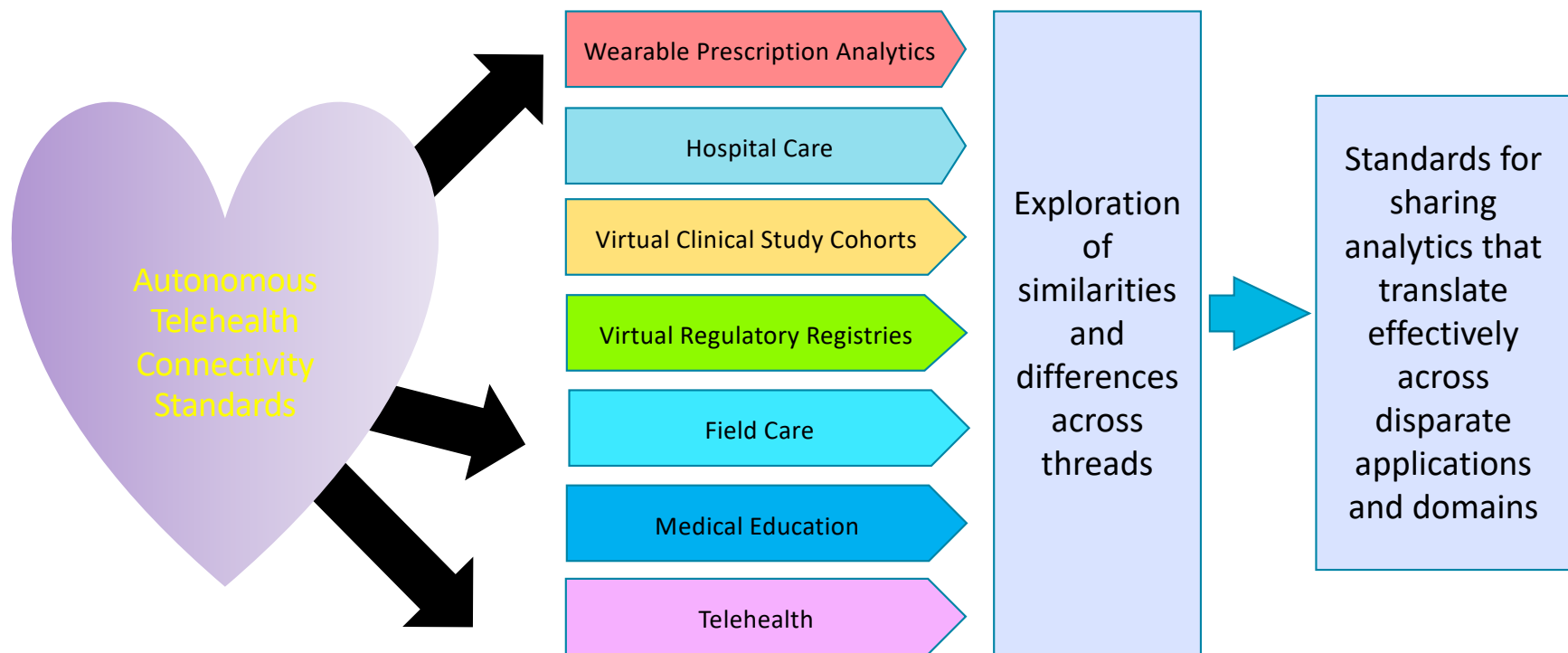
FORMING THE STANDARDS WORKING GROUP: EXPERIENCES LAUNCHING IEEE P2795



The IEEE standard for shared analytics aims to standardize interactions between nodes that are required for distributed analytic exchange.

IEEE P2795 STANDARD USE CASES AND WORKFLOWS CATALYZED THE WORKING GROUP

FORMING THE STANDARDS WORKING GROUP: EXPERIENCES LAUNCHING IEEE P2795



SPEAKER

Ms. Cj Rieser Ph.D. is a senior member of the IEEE women in engineering and medical communities. As a Division Futurist for Medical Technology in the MITRE Labs Emerging Technology Innovation Center and a Research Faculty in the UVA School of Medicine Department of Public Health Sciences, Dr. Rieser serves as the UVA-MITRE Partnership Leader. In this capacity, she envisioned, established, and directs the MITRE @ University of Virginia (UVA) Health Innovation Hub site that hosts an integrative engineering initiative in medicine known as the MITRE@UVA Health Learning Laboratory. The Lab enables collaboration on complex data environments, smart connected mobile telehealth systems, and shared clinical analytics capabilities to improve care, safety, and quality of life. Her translational research & teaching uses creativity as a catalyst to incubate cognitive analytics, cyber-physical systems, human learning, and other emerging technologies. In addition, Cj serves on IEEE's global medical technology standards steering committee and facilitates a working group of thought leaders spanning government, academia, as well as industry with interests in developing standards for sharing analytics and portable data models. Dr. Rieser's doctoral research as a National Science Foundation (NSF) Fellow was supported by the Integrative Graduate Education and Research Traineeship (IGERT) program at Virginia Tech focused on advanced networking. As a Principal Medical S&T Engineer at MITRE she directs engineering services and research in partnership with her UVA Health colleagues that include managing engineering activities, mentoring researchers, publishing innovative findings, and transitioning emerging medical technologies into use.