



Data Analytics: Social Determinants of Health

July 23, 2020



Agenda

- Welcome and Introductions
 - Claudia Ellison, Director of Programs and Services, eHI
- Overview of Today's Topic
 - Al Kinel, President, Strategic Interests, LLC
- Discussion:
 - Amy Salerno, MD, Director of Community Health and Well-Being, University of Virginia
 - Karen Rheuban, MD, Professor of Pediatrics, Senior Associate Dean, University of Virginia, Co-founder of UVA Center for Telehealth, former President of American Telemedicine Association
 - Ruben Amarasingham, MD, Founder and CEO of Pieces Technology
- Next Steps



Workgroup Goals

- This workgroup will identify and share best practices to access and utilize information and analytics to improve care, lower costs, and enhance the care experience.
- Prior Year's Scope:
 - **Traditional Sources and Uses** of Data Enabled by Interoperability:
 - Transitions of Care
 - Analytics
 - Clinical and Claims Data
 - **Non-Traditional Sources and Uses** of Data:
 - Genetic Data
 - ***Social Determinants of Data***
 - Diagnostic Imaging
 - Wearables & Patient Generated Health Data
 - Patient Reported Outcomes

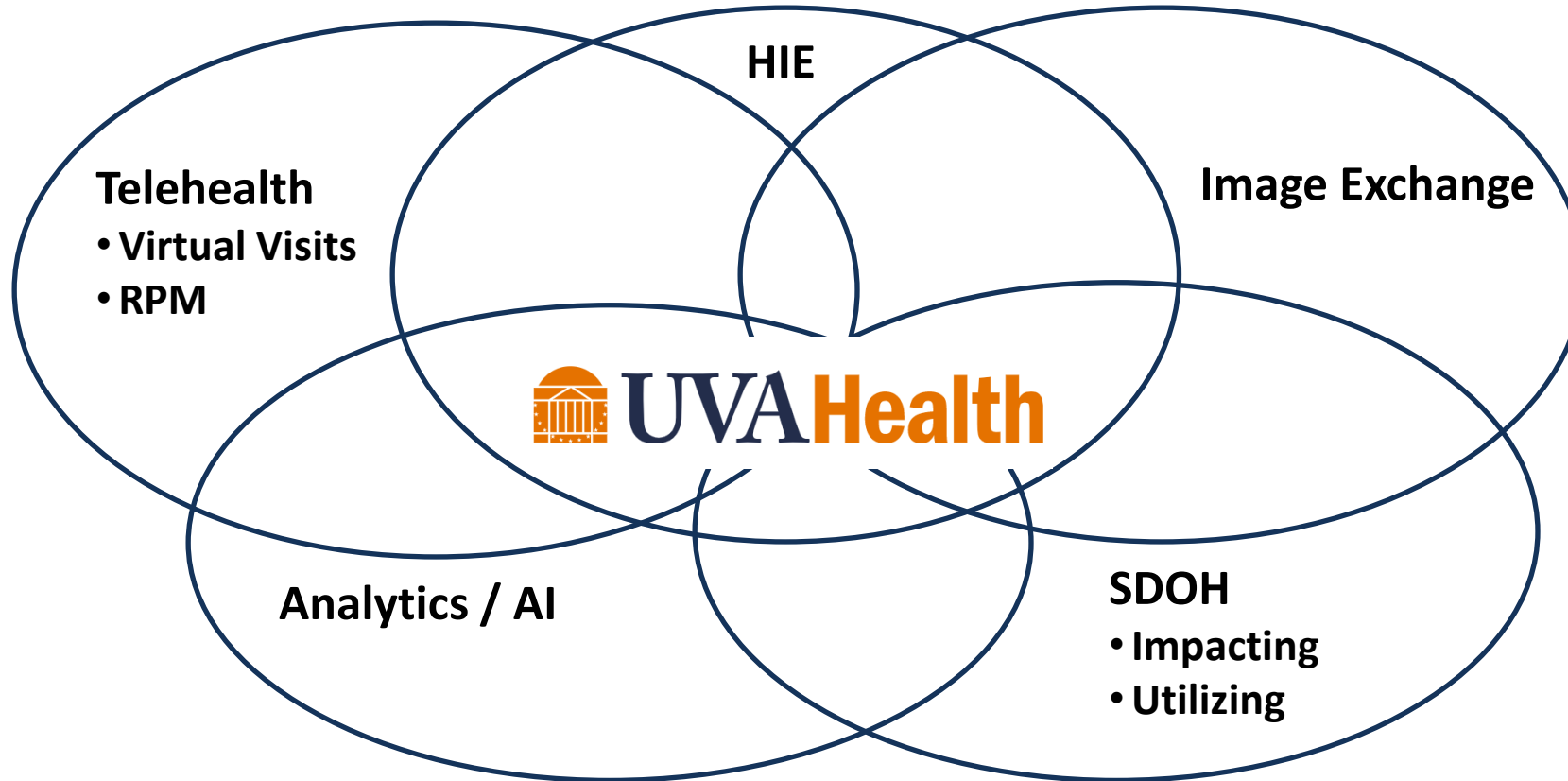
2020 Workgroup Goals

- This workgroup will identify and share best practices to access and utilize SDOH data into a plan of care and interventions for individuals and communities.
- Topics to cover include:
 - Role of HIEs in SDOH data exchange
 - Categories of Data and Coding Schemes
 - Role of Teleheath, Remote Monitoring, and Patient Reported Data
 - How collaboratives align stakeholders to capture and utilize SDOH
 - ***Converging Technologies – how they impact and utilize SDOH***
 - IF WE HAVE TIME: Policy and operational issues surrounding surveillance and behavior



Converging HIT

Bringing it Together to Attain Significant Impact

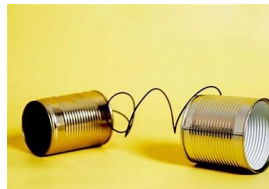


Core Technologies

Smartphones



Communications



AI / ML



Data and Technology Enabling Community Impact

Social Determinants of Health

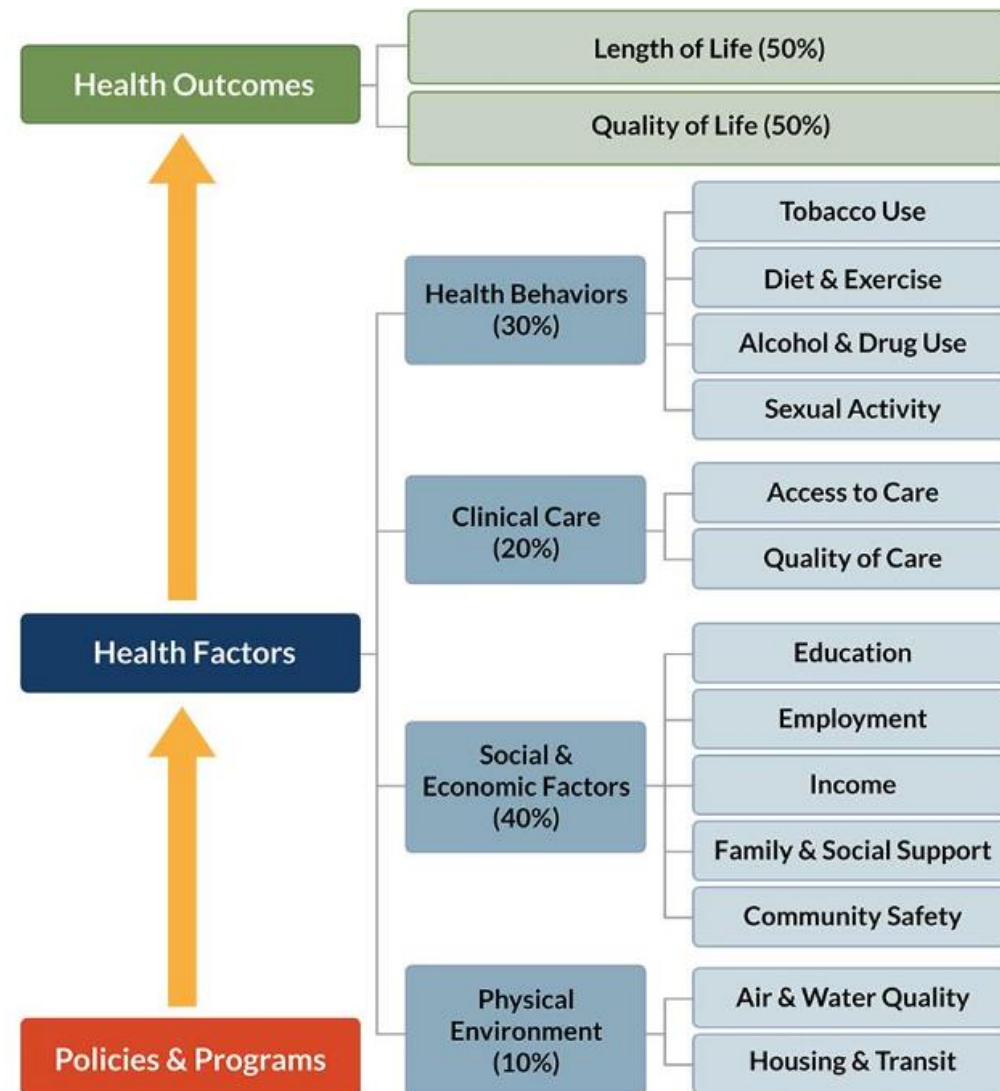
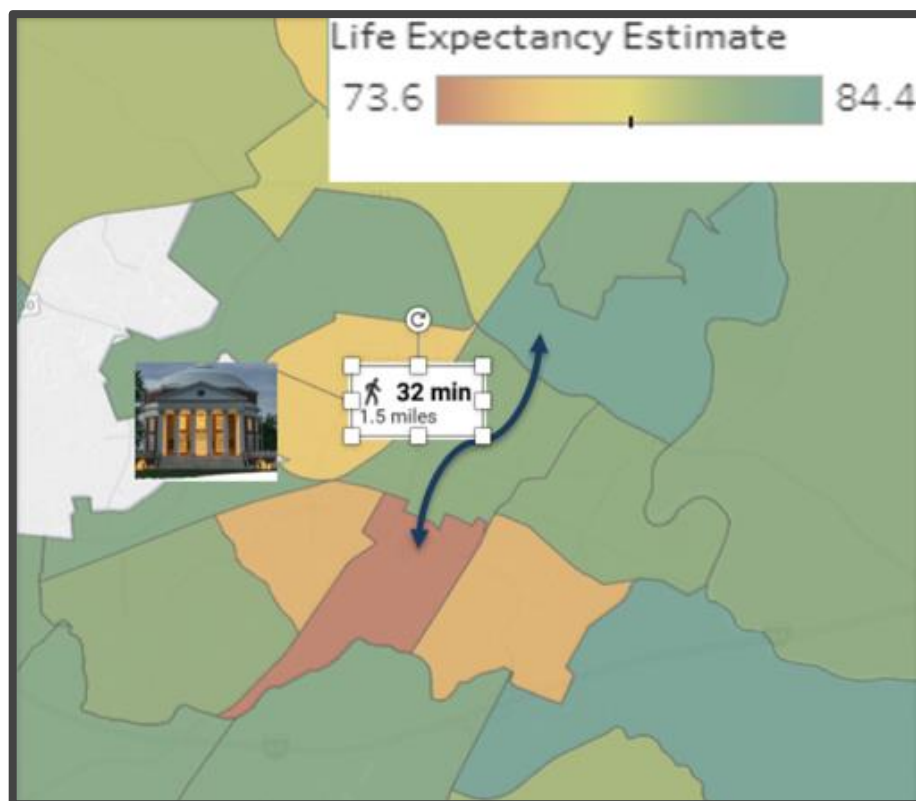


Amy Salerno, MD
University of Virginia



Ruben Amarasingham, MD
Pieces Technology

Charlottesville: SDoH Impacts



COVID – Existing Disparities Worsen

The COVID-19 Struggle In Chicago's Cook County Jail

April 13, 2020 · 6:09 PM ET



<https://www.npr.org/2020/04/13/833440047/the-covid-19-struggle-in-chicagos-cook-county-jail>



'A Terrible Price': The Deadly Racial Disparities of Covid-19 in America

New York Times Magazine. April 29, 2020.
<https://www.nytimes.com/2020/04/29/magazine/racial-disparities-covid-19.html>



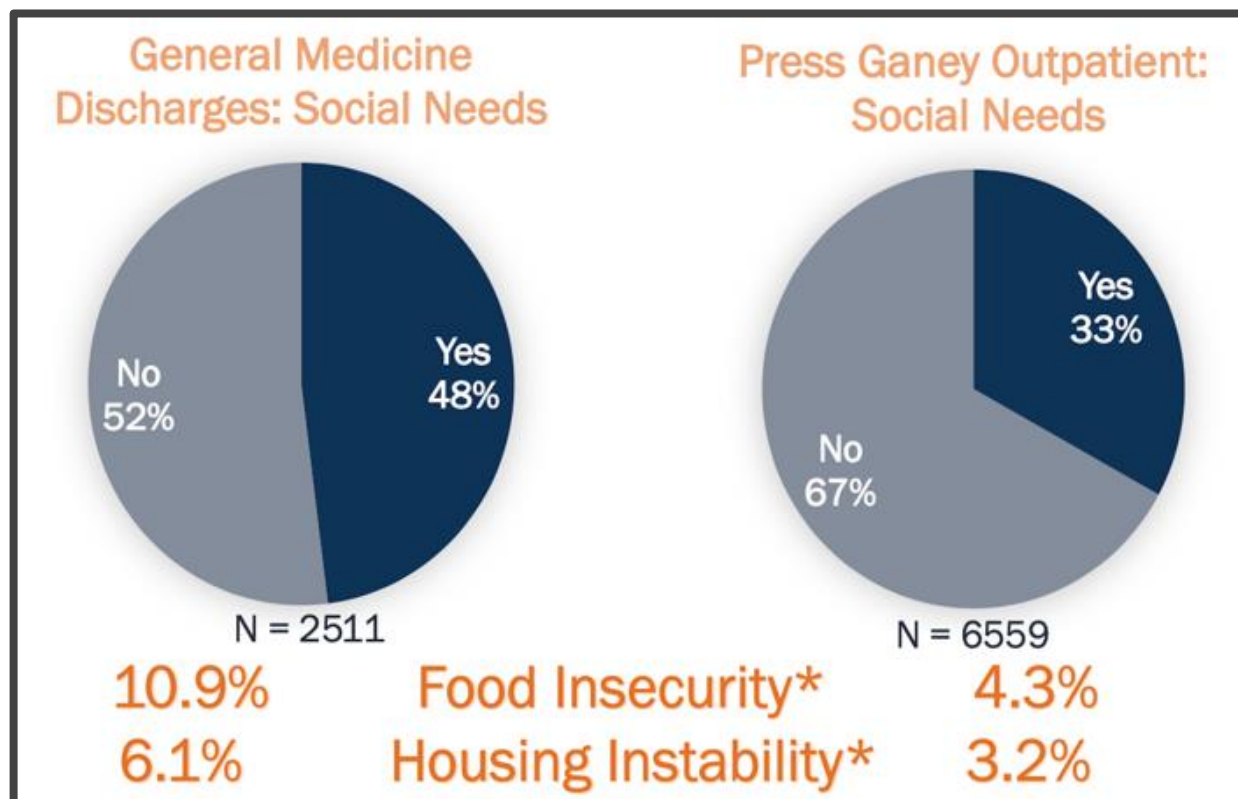
Stuart Malcolm, a doctor with the Haight Ashbury Free Clinic, speaks with homeless people about the coronavirus in San Francisco. // Josh Edelson / AFP/ via Getty Images

No Easy Fixes as Covid-19 Hits Homeless Shelters

SARAH HOLDER / KRISTON CAPPS APRIL 17, 2020

<https://www.npr.org/2020/04/13/833440047/https://www.citylab.com/equity/2020/04/homeless-shelter-coronavirus-testing-hotel-rooms-healthcare/610000/>

Social Needs of UVA Patients



* >2 RR of Non-Emergent ED visits (p< 0.05)

What Can UVA Health Do?

Key Principles Considered as UVA developed strategies

- Ability to address social needs when/where they arise: In Community, not just in the hospital/clinic
- Community Based Organizations are the experts and solutions should empower and enable them to do their work better
- Find solutions that “meet us where we are” and help UVA and the greater community further along in the journey of addressing SDoH.
- Align with broader Health System Strategy: Allow UVA to use data and track patients across their care journey to track social needs and community impact on key Health System metrics such as Readmissions, Length of Stay, Ambulatory Sensitive Admissions, and non-emergent ED visits.

Our Journey

Partnered with the
community based organizations

Charlottesville
Free Clinic

United Way
Thomas Jefferson Area

regionten
a better life, a better community

Leading People Home
TJACH
Thomas Jefferson Area
Coalition for the Homeless

jaba
Live better. Longer.

PVCC
PIEDMONT VIRGINIA
COMMUNITY COLLEGE

PATHWAYS
TO POPULATION HEALTH

Loaves & Fishes
FOOD PANTRY

ON OUR OWN
OF CHARLOTTESVILLE

NETWORK
2WORK
@PVCC
Real Jobs. Real People. Realizing Dreams.

Jaunt

partner
FOR
MENTAL
HEALTH

CVHS
HEALTH SERVICES

UVAHealth

Pieces Technologies

Pieces Predict

(formerly Pieces DS)

Real-time AI analytics platform that integrates directly into hospital EMRs. NLP surfaces social determinants of health and clinical risk factors from unstructured notes for timely and personalized interventions and care planning

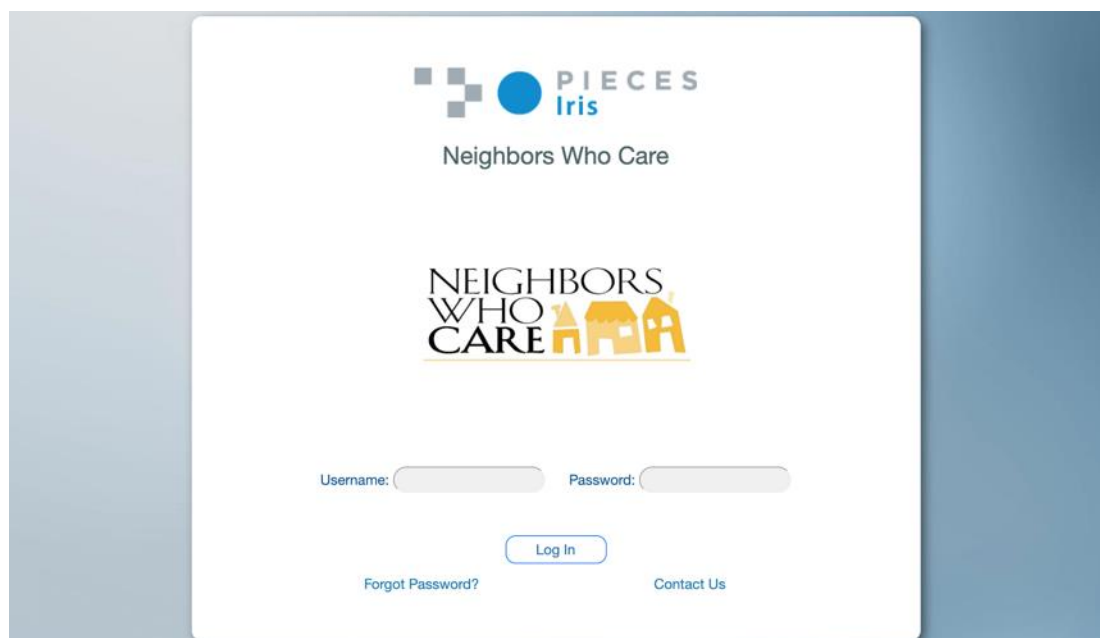


Pieces Community Connect

(formerly Pieces Iris)

A fully-linked case management platform that can be used by virtually any community based organization, hospital or clinic. Enables closed loop referrals and care plans that allows health systems to address social determinants of health and community organizations to perform full case management

Pieces Community Connect: Meeting the needs in the community



- **PIECES CONNECT: A FULLY FUNCTIONAL CASE MANAGEMENT SYSTEM FOR OUR COMMUNITY PARTNERS**
- **SUPPORT COMMUNITY PARTNERS WHO CAN APPLY FOR GRANTS**
- **AN APPROACH THAT BRINGS VALUE TO ALL OF THE ORGANIZATIONS IN THE COMMUNITY**

Meet us where we are: Pieces Predict

medication issue

consultation feedback

social vulnerability

pending placement

Dispo: needs IV AB , final plan for AB therapy pending ID recs , unlikely to self administer & no family support , might need SNF , OPAT team following

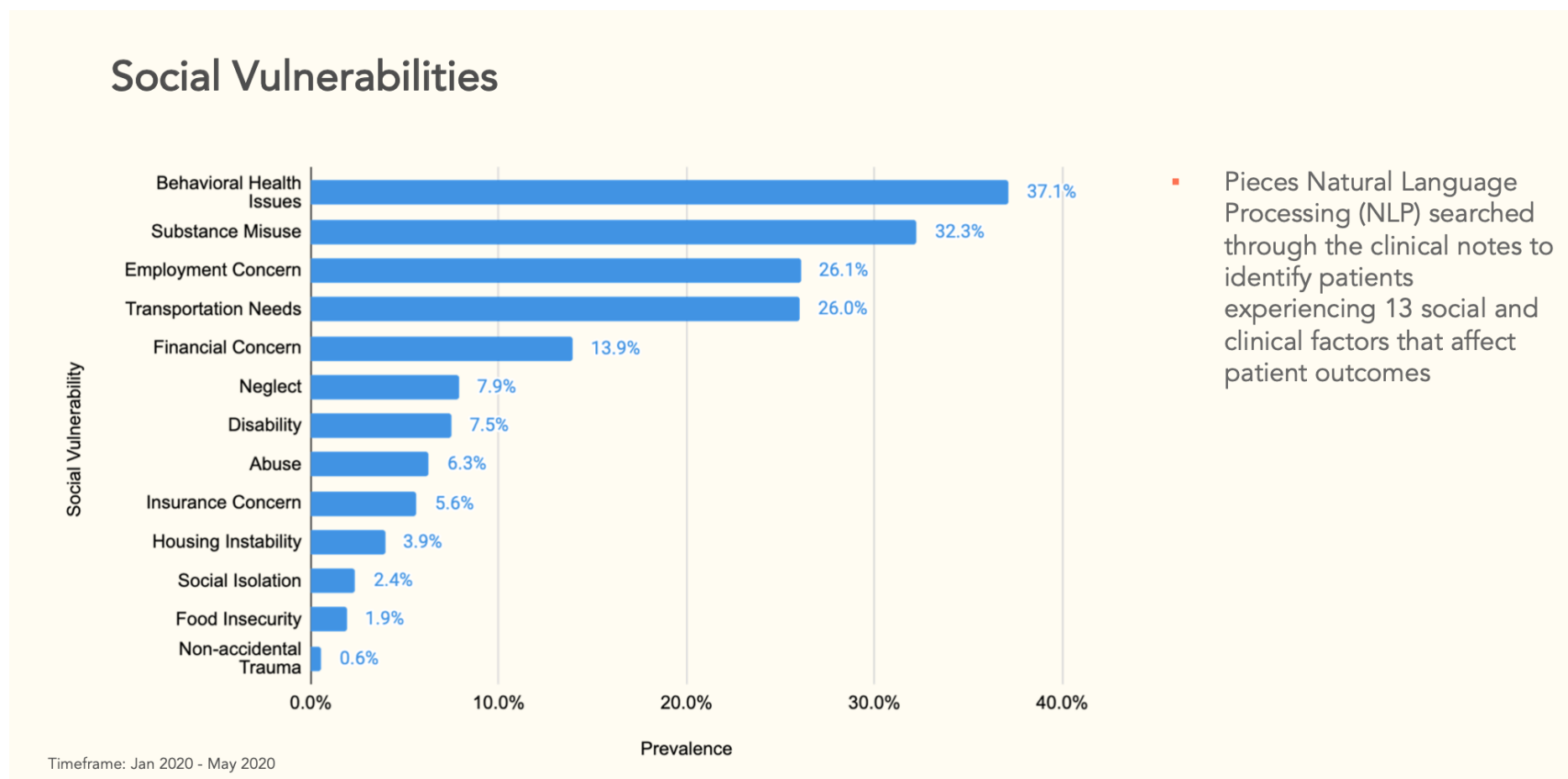
Decision

Submit Dismiss Undecided Your comments here Confirm 1:17

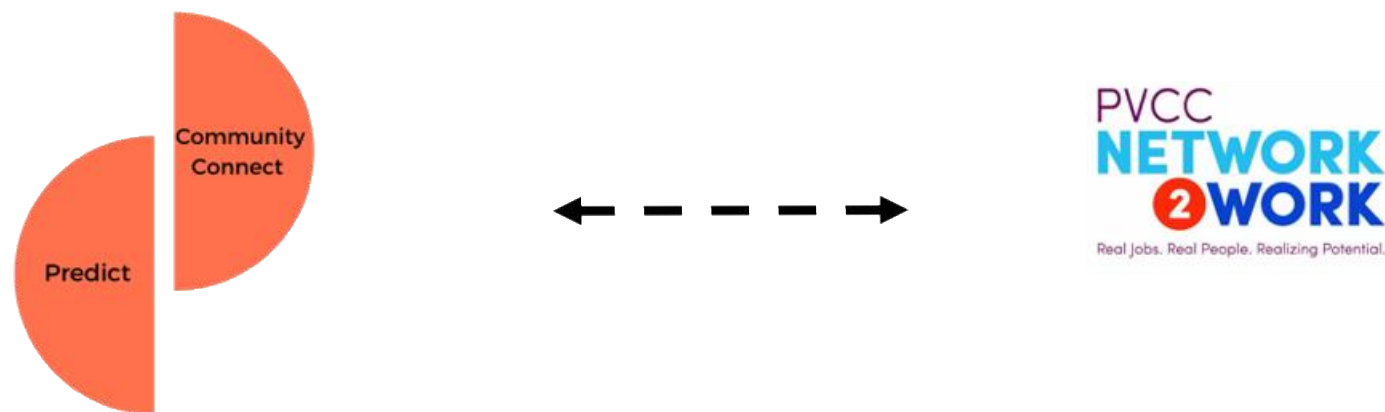
Some spiculated nodules seen on abd CT concerning for malignancy , chest CT reports concerning for malignancy , ordered CT guided lung biopsy for evaluation , completed 10 / 12 and bacterial cx showed MSSA , **pending test and procedure** **pending result** **general** **relax** Pt had pneumothorax following lung biopsy that was stat continued to be asymptomatic with normal sats overnight on RA , monitor clinically .

Resolved issues :
 Afb with RVR - resolved .
 - resolved with cardzem .
 Cont aspirin for AC .
 - Likely due to DKA and infection .
 Echo with normal EF and normal LA .
 Visual loss - resolved .
 - transient and intermittent . suspicious for amaurosis fugax given the recurrent , intermittent nature .
 Patient seen by ophthalmology eval .
 Retinal exam showed vitreous hemorrhage .
 OP follow up on dc .

NLP identified Social Needs



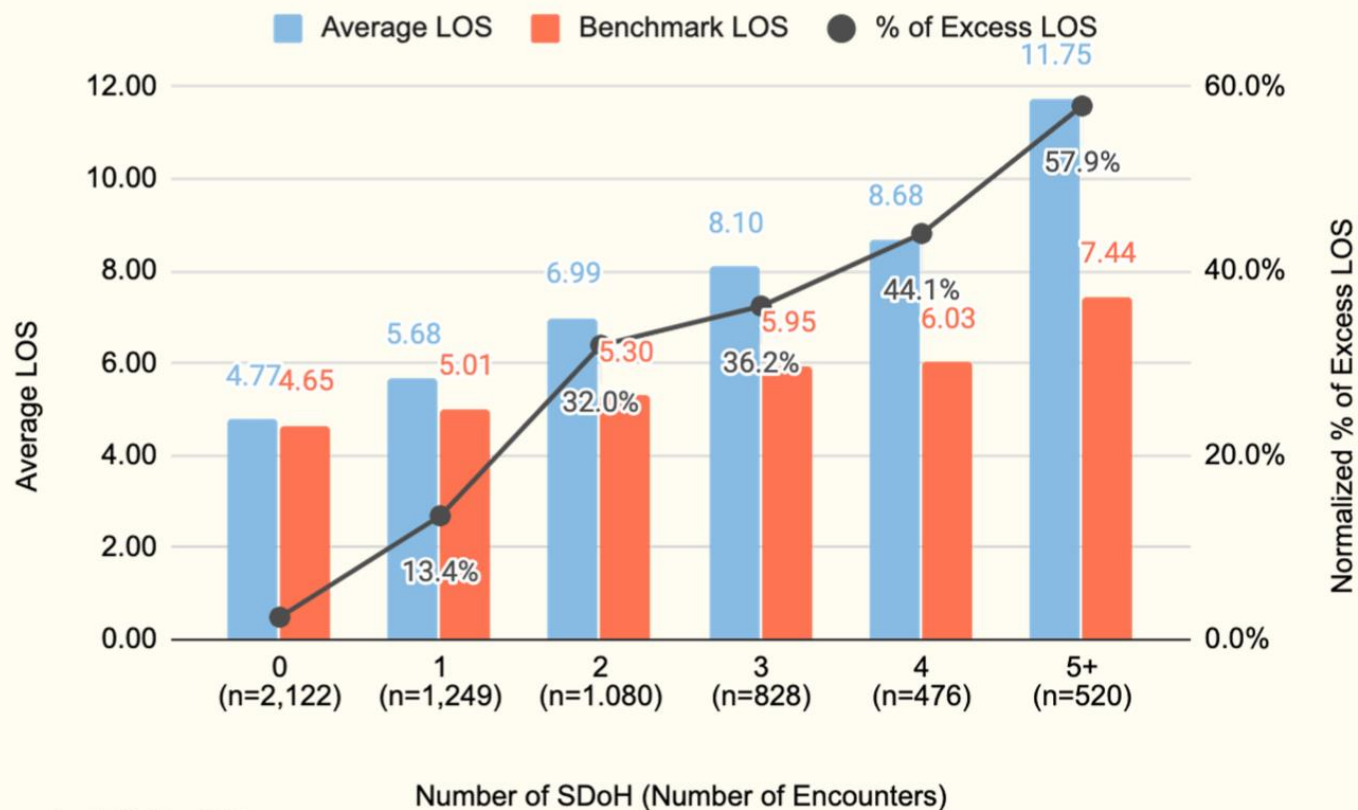
Meet the Community Where They Are



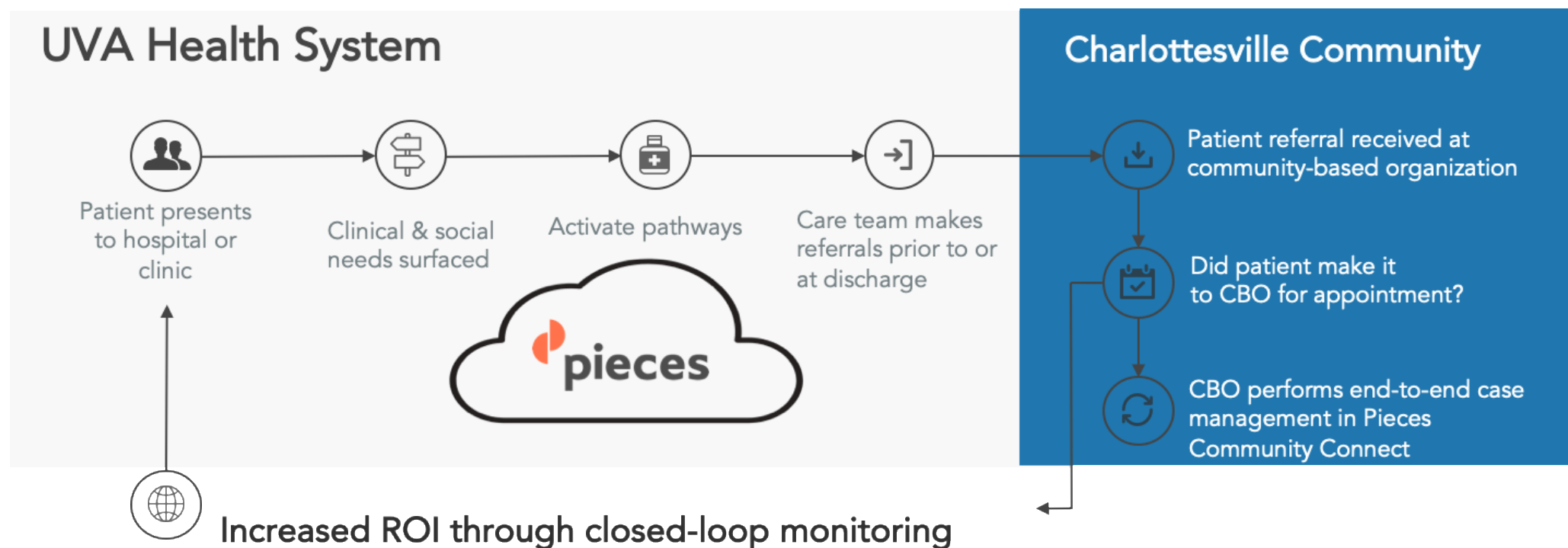
Interoperability between local community software systems to build on existing community assets. Integration of NW2W and Pieces Community Connect will support workflow and the benefits of this project will result in seamless social service follow-up needs inside and outside UVA.

Aligning with Key Health System Strategies

Social Vulnerability Impact on LOS



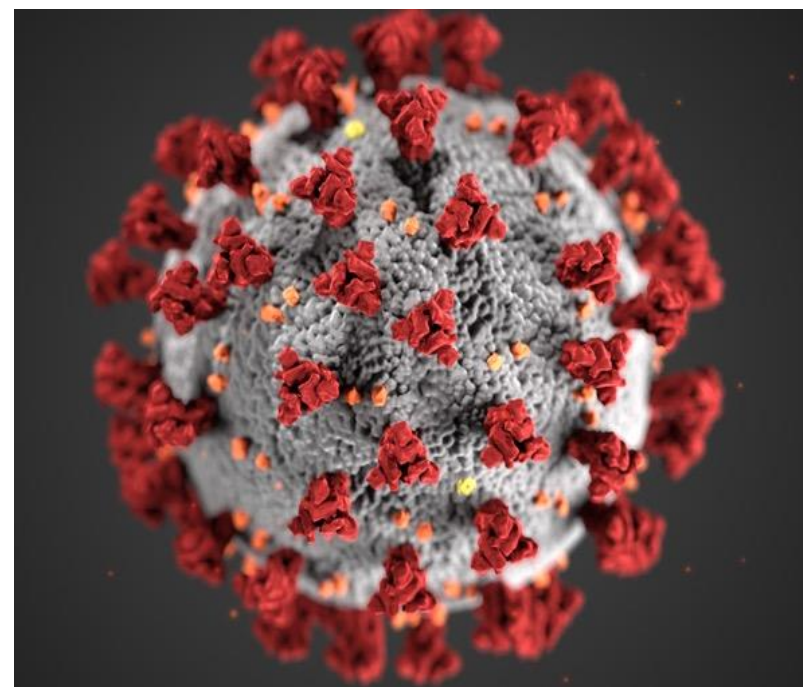
Tracking Patients Across the Care Journey



- Evaluation of Key Measures
- Pieces Predict consultative analytics

Leveraging Existing Infrastructure During COVID to address vulnerable populations

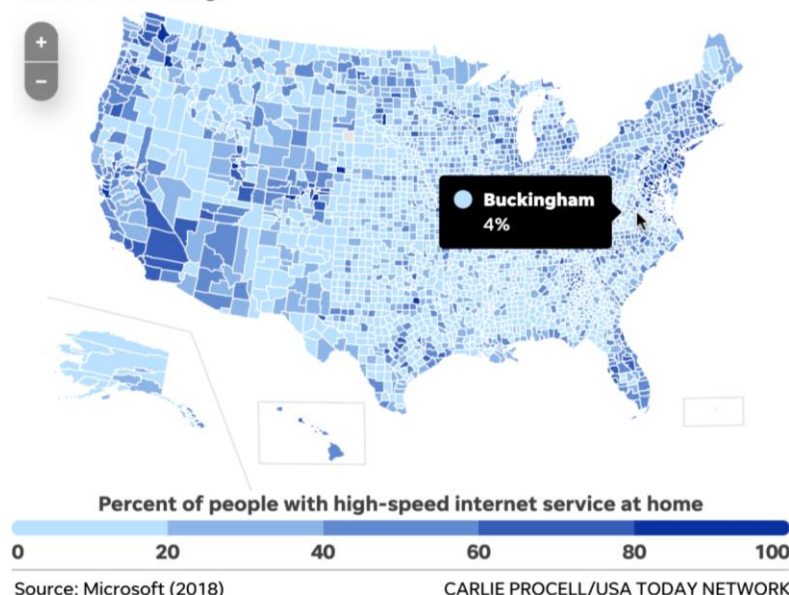
- Acute Social Needs
- NLP evaluation to assess disparities in COVID-19 care
- Community Call Line
- Telehealth –
Jails/Prisons/Homeless
Shelters



Access to Telehealth – A Critical SDoH for COVID

Broadband usage by county

The map shows the percentage of people who had high-speed internet service at home in each U.S. county in 2018, according to research by Microsoft. Minimum broadband speeds are adequate for video conferencing and video streaming.



Telemedicine

Lessons learned from a pandemic



Karen S. Rheuban MD
Professor of Pediatrics
Director, UVA Center for Telehealth
Senior Associate Dean for CME

Disclosure:
Dr. Rheuban serves on the advisory board of TytoCare,
and the board of Locus Health



Supports the delivery of patient care, research and education facilitated by communications technologies, including:

- live, interactive telemedicine encounters
- store and forward services
- remote patient monitoring
- clinical videoconferencing for collaborative patient management (e.g. tumor boards, Project ECHO, cath conference with referring providers)
- eConsults

Telehealth is not a specialty in and of itself.
At UVA, the service is managed centrally and deployed
across the enterprise

Benefits of Telehealth



PATIENTS	<ul style="list-style-type: none">▪ Improve access to specialty care▪ Reduce unnecessary travel▪ Meet consumer demand▪ Facilitate improved outcomes
HEALTH PROFESSIONALS	<ul style="list-style-type: none">▪ Expand reach of providers▪ Increase workforce expertise and capacity▪ Facilitate better continuity of care
HOSPITAL SYSTEMS	<ul style="list-style-type: none">▪ Grow strategic partnerships▪ Improve transfer coordination▪ Fill gaps in specialty coverage
COMMUNITIES	<ul style="list-style-type: none">▪ Improve population health▪ Support healthcare facilities▪ Mitigate workforce shortages



- Health system (including academic) classical hub and spoke models, many also extending to the home
- Veterans Health Administration
- Telemedicine services companies
 - Specialty care, Remote patient monitoring
- Retail and pharmacy clinics
- Workplace clinics
- School based clinics
- Aging in place models
- Project ECHO models
- Direct to consumer models
 - Within systems, payer developed, independent subscription services

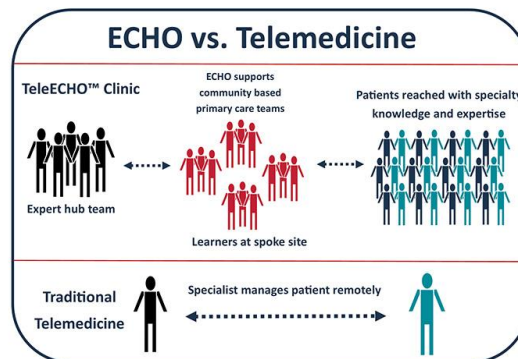




- ~ 20,000 patient encounters in Virginia/year
 - Offer services in >60 subspecialties
 - EVERY clinical service line participates
- Telemedicine program is integrated with teleradiology, with documentation in EPIC
- >4500 e-consults
 - Pediatric subspecialties included
- Remote patient monitoring program at home
 - Locus Health partnership; >11,000 patients
- Screening for diabetic retinopathy:
 - 4,475 screenings
 - New AI enabled technologies
- Spared Virginians > 21 million miles of travel
- Emergency (and special pathogen) preparedness



- Undergraduate Medical Education
- Graduate Medical Education
- Continuing Medical Education
 - Project ECHO (including COVID19)
- School of Nursing/ODU NP training programs
- Telehealth Village
- International programs
- Patient education (e.g. Diabetes education)

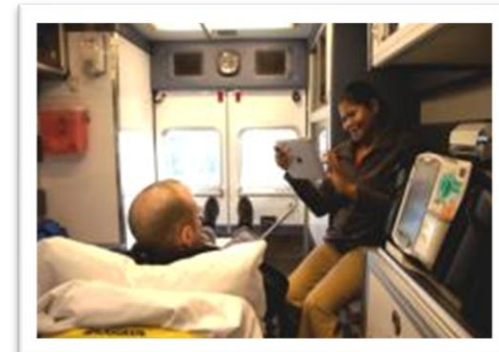
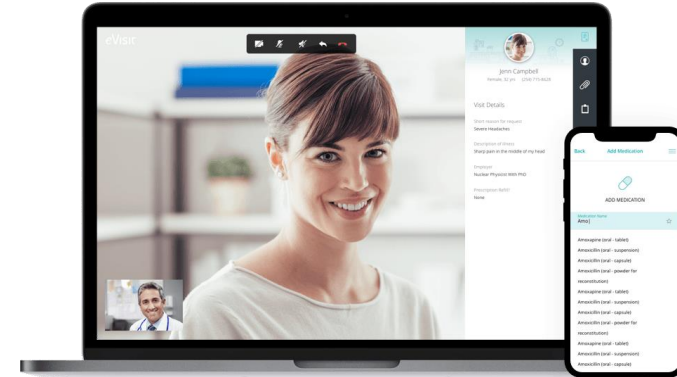




- MATRC funding from HRSA
- eBACKPAC HRSA school based telehealth program
- Remote care delivery trials of in-person services
- Device research (Remote examination tools, medication compliance models, health-promoting gamification research)
- InnoVAte grant from CDC/VDH
- Improve patient access to clinical trials
- Support faculty in multi-institutional research collaborations
- iTHRIV (CTSA)
- SPROUT Pediatric research network

To date, we have been awarded >\$22 million in extramural research funding

HIPAA compliant, interoperable, FDA approved technologies





- Acute stroke intervention
 - Treatment rates = that in our own emergency room
- High Risk Obstetrics
 - Reduction in preterm deliveries, NICU days
- Screening for diabetic retinopathy
 - 70% abnormal
- Remote patient monitoring partnership with Locus Health
 - Readmissions reductions
 - Chronic disease management (adult and pediatric)
 - Transplant patients
 - High risk pregnant women
- Telepsychiatry services (and VMAP)
 - Number 1 request for services;
 - 30% decrease in missed appointments
 - High rates of patient satisfaction
- Diabetes prevention and treatment
 - Expand models of care for diabetes, diabetes prevention and cv risk reduction
- Performance metrics of internal and partner systems
- Press Ganey patient satisfaction tool

2019 Strategic planning



- Improve patient access to care
 - Expand telehealth contracts
 - Develop DTC capability integrated into EPIC
- Improve UVA and referring provider engagement
 - Expand eConsults
 - Expand access to telemedicine services
 - Expand training
- Expand chronic disease management through RPM tools
- Improve transfer management and care coordination
 - Expand ED, hospital and ICU partnerships
 - Expand post-acute services



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Who led the digital transformation of your company?

- A) CEO
- B) CTO
- C) COVID-19





Advance pandemic related solutions above and beyond our telemedicine strategic plan across inpatient, outpatient and post-acute settings

- Improve access, triage and better manage patient care
- Reduce patient and provider exposure, conserve PPE
- Backfill both primary care and specialty visits virtually
- UVA Health accelerated the opening of our new bed tower
- Expand training internally and externally



- Established COVID clinics for screening and testing
- Expanded RPM for quarantined patients and those with chronic illness (including hotel for homeless COVID-19 patients)
- Developed workflows to enable the transition of in-clinic visits to virtual, including GME workflows
- Expansion of iSOCOMS special pathogen program
- Rapidly scaled to congregate care settings (LTC), homeless shelter
- Developed a DTC portal to enable urgent care services
- Expand training
 - COVID19 Project Echo, Telehealth Village
 - Training specific to telehealth
- Streamline telemedicine contracting

Public policy changes: Public health emergency

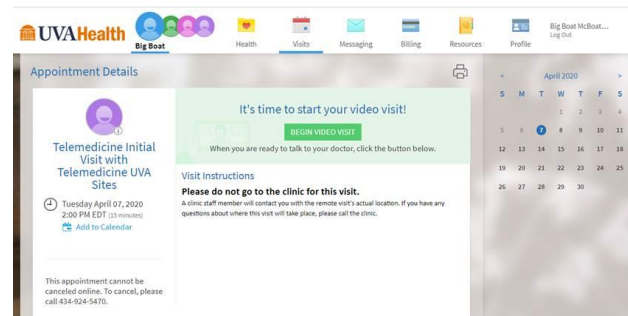


- Medicare: elimination of most restrictions
 - Home became an eligible patient originating site
 - Not just rural
 - Expanded CPT codes
 - Expanded providers
 - Added telephone codes
- Medicaid: similar to Medicare
 - Added RPM for COVID-19 patients
- Relaxation of OCR enforcement of HIPAA
- Relaxation of Stark provisions
- FCC new programs:
 - COVID 19 telehealth program
 - Connected care pilot program
- Licensure: federal and state actions

“All hands on deck”



- Health IT engagement including expansion of our enterprise WebEx agreements and EPIC transformation
 - Creation of a My Chart enabled WebRTC platform
 - Deploy hardware in clinics to support VTC
 - Facilitate BYOD with OCR HIPAA enforcement relaxation
- Engage scheduling teams to ensure all visits integrated with EPIC templates
- Billing team engagement including tracking changes in payment policies

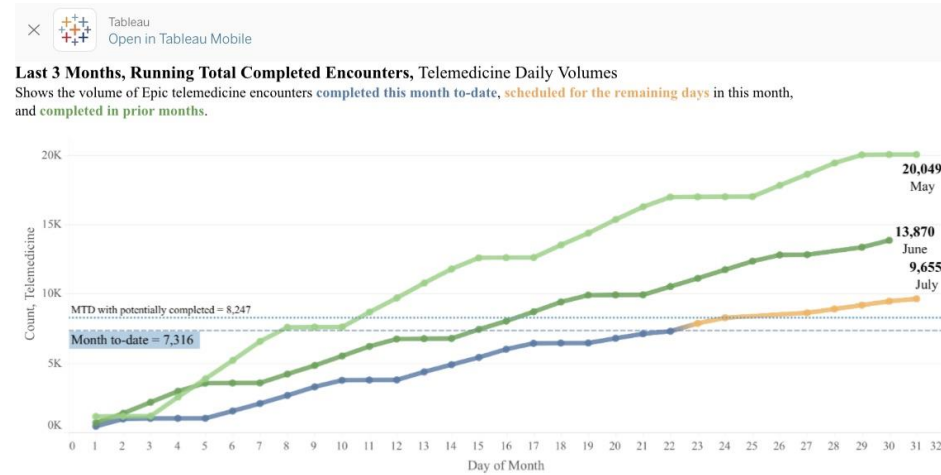


“All hands on deck”

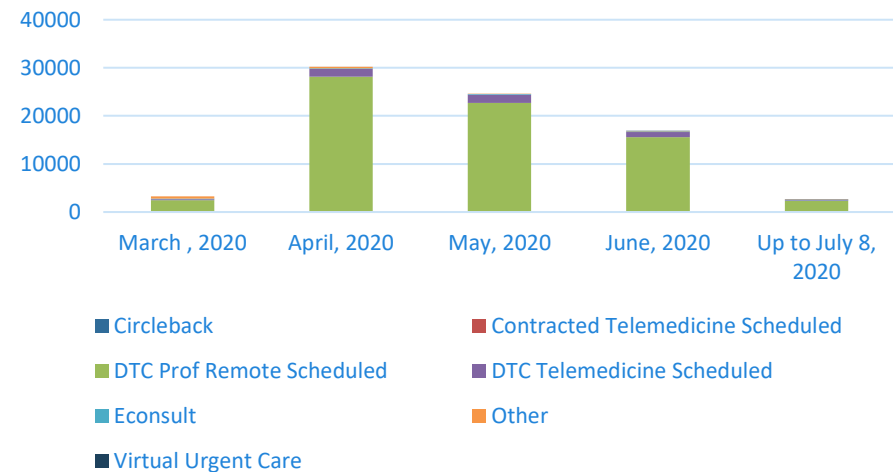


- Expand our telehealth team workforce
- Provide regular communications with our providers including:
 - consent language,
 - smart phrases,
 - billing codes,
 - tip sheets
- Data analytics to track progress
- Survey of our providers
- RFI for enterprise platform
- Engage with federal/state policymakers, and all stakeholders

UVA telemedicine: Where are we now?



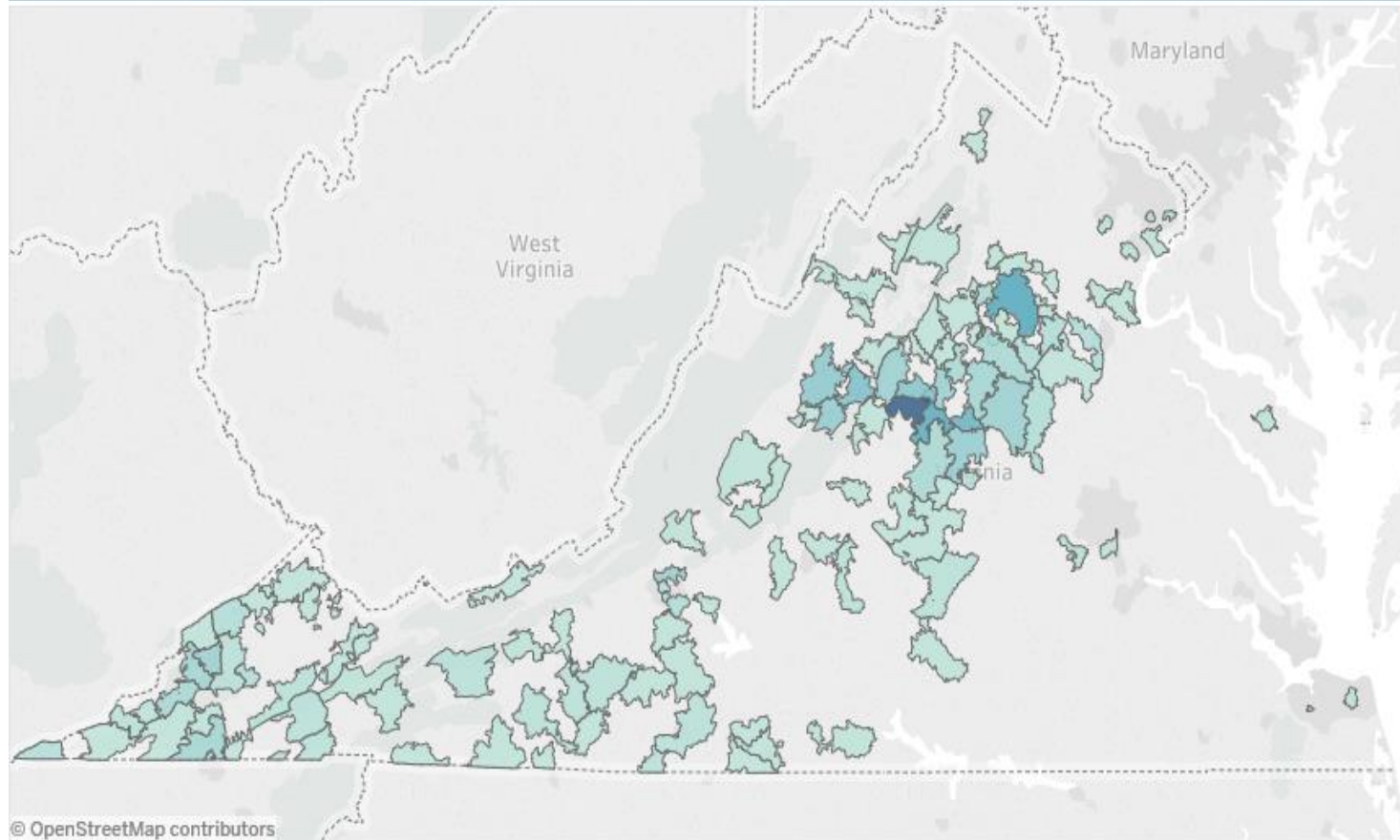
Telemed Encounters by Type



UVA telemedicine: February, 2020



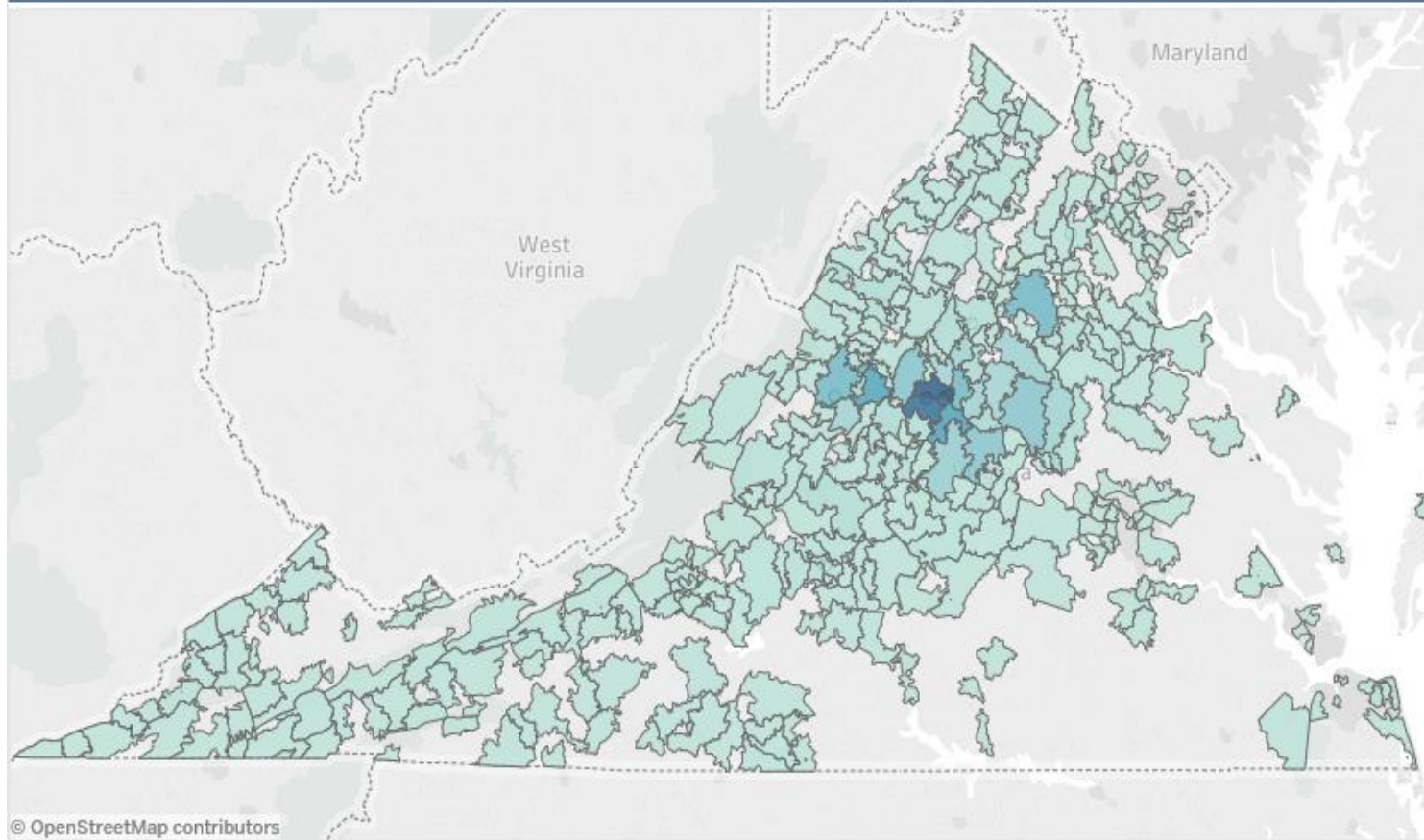
Zip Code Map



UVA telemedicine: March, 2020



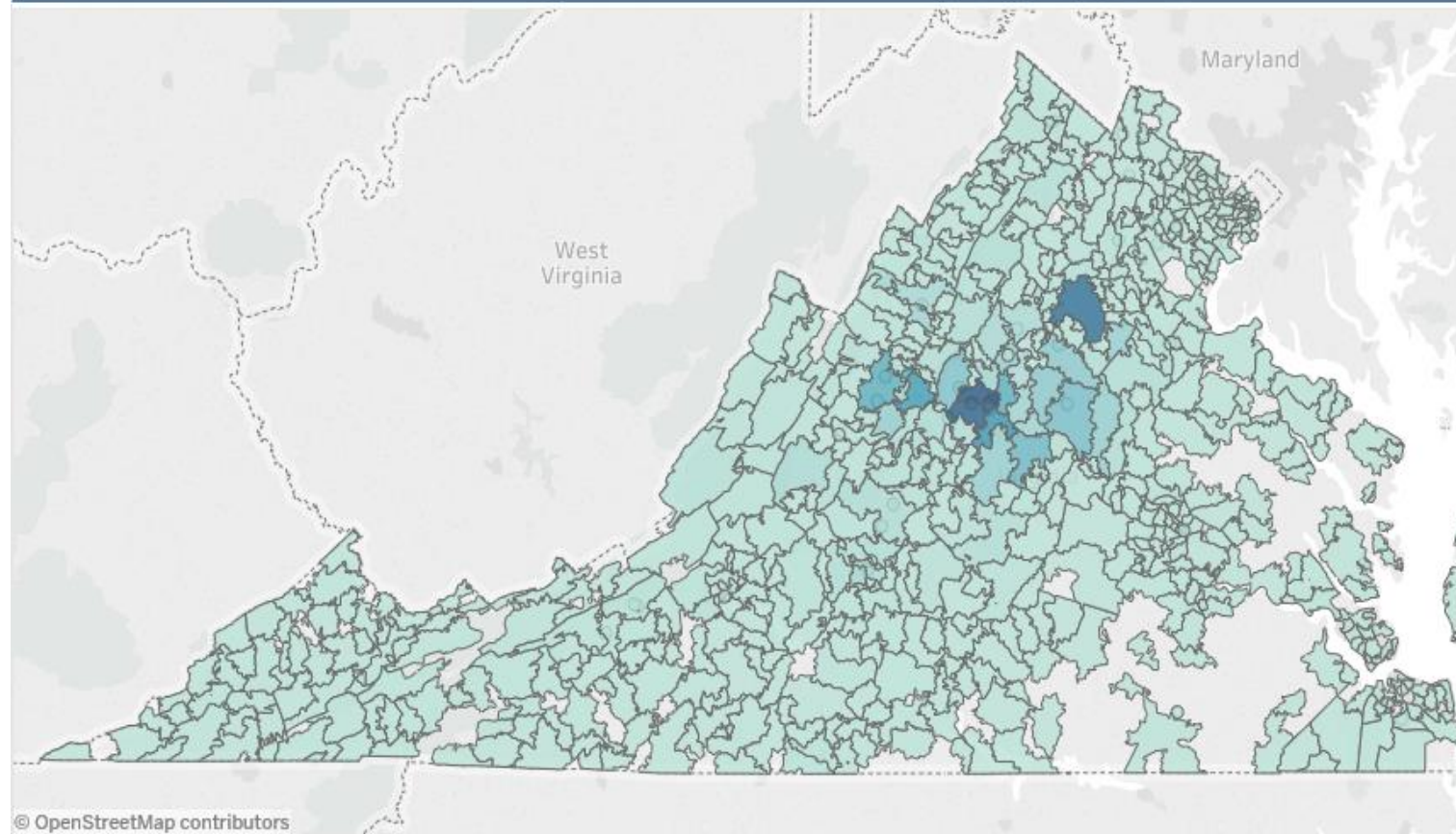
Zip Code Map



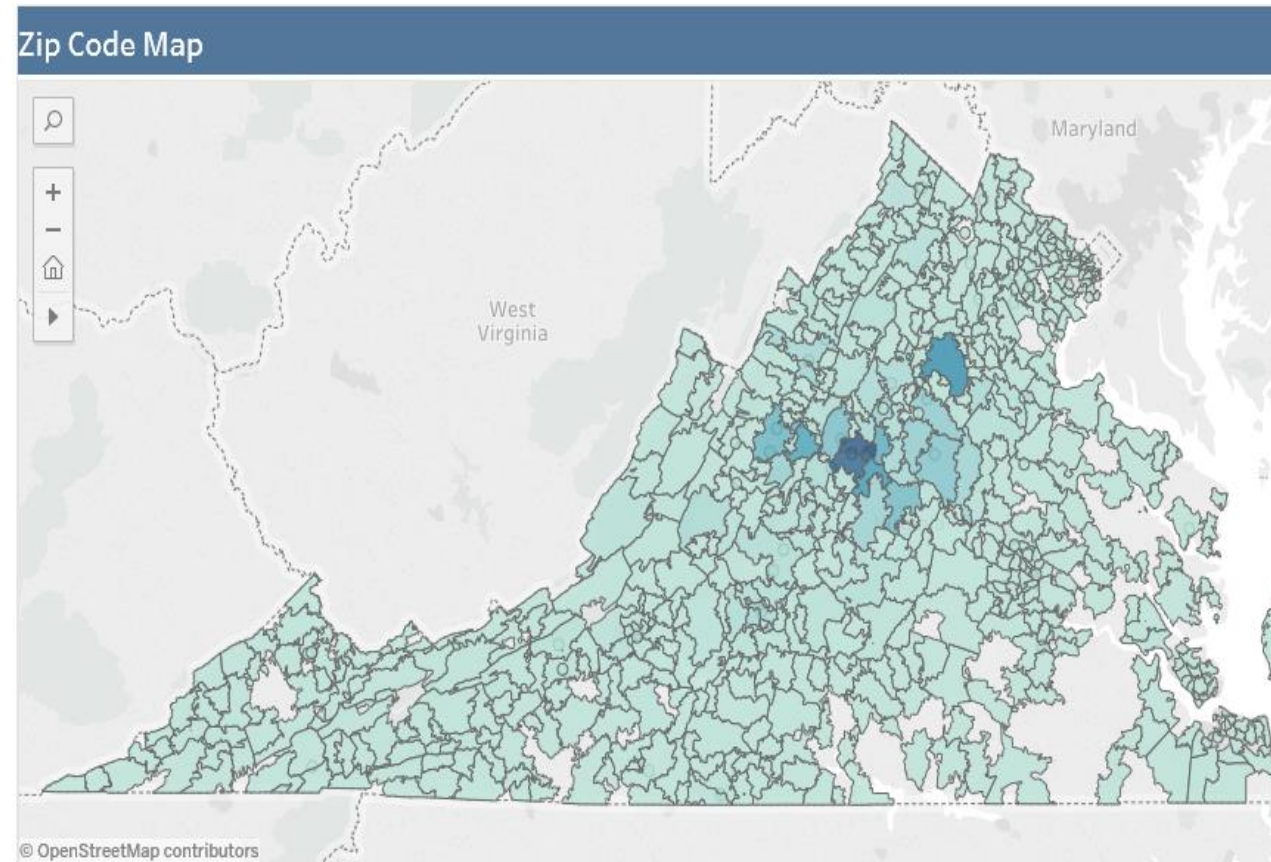
UVA telemedicine: April 2020



Zip Code Map



UVA telemedicine: May, 2020





1900 responses to Press Ganey survey regarding UVA telehealth service from April to June, 2020

- 97.5% were likely to recommend their care provider
- 90.1% were likely to recommend our video visit service
- 83.4% were willing to have future telemedicine visits after the COVID quarantine is over

Where are we going from here?





Questions?
Thank you



Next Meeting Date

- Next meeting date: August 26

