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Disclosure

Dr. Rheuban serves on the advisory boards of Tytocare and Locus Health
What is Telehealth?

The delivery of patient care, research and education supported by telecommunications technologies, including:

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

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

<table>
<thead>
<tr>
<th>PATIENTS</th>
<th>HEALTH PROFESSIONALS</th>
<th>HOSPITAL SYSTEMS</th>
<th>COMMUNITIES</th>
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</table>
| ▪ Improve access to specialty care  
▪ Reduce unnecessary travel  
▪ Meet consumer demand  
▪ Facilitate improved outcomes | ▪ Expand reach of providers  
▪ Increase workforce expertise and capacity  
▪ Facilitate better continuity of care | ▪ Grow strategic partnerships  
▪ Improve transfer coordination  
▪ Fill gaps in specialty coverage | ▪ 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
>100,000 patient encounters in Virginia
  – Offer services in >60 subspecialties
  – EVERY clinical service line participates
• Telemedicine program is integrated with teleradiology, with documentation in EPIC
• >4300 e-consults
  – 4 Pediatric subspecialties now participating
• 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 > 19 million miles of travel
• Emergency (and special pathogen including ebola) preparedness
UVA Center for Telehealth: Educational mission

- Undergraduate Medical Education
- Graduate Medical Education
- Continuing Medical Education
  - Project ECHO
- School of Nursing/ODU NP training programs
- Telehealth Village
- International programs
- Patient education (e.g. Diabetes education)
UVA Center for Telehealth: Research mission

- 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 >$20 million in extramural research funding
UVA Telemedicine Partner Network

- Rural clinics/free clinics
- Community Hospitals (including CAHs)
- FQHCs
- CSBs
- Medical practice sites (including UPG)
- Virginia Department of Health sites
- Correctional facilities
- PACE programs
- Dialysis facilities
- Locus-Health partnerships in the home
- Assisted living, skilled nursing and rehabilitation facilities
- **Schools**
- International sites
- **By-Your-Side Pediatrics**
HIPAA compliant, interoperable, FDA approved technologies
• Acute stroke intervention
  - Treatment rates = that in our own emergency room
• High Risk Obstetrics
  - 38% reduction in NICU hospital days; new RPM program
• Screening for diabetic retinopathy
  - 40-70% abnormal depending on patient populations screened
• Remote patient monitoring partnerships
  - Readmissions reductions
  - Chronic disease management
  - Imprint model for medically complex pediatric patients, shortened LOS
• Telepsychiatry services
  - 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
Remote monitoring: Diabetes and CHF

- Community based diabetes RPM and virtual care in FQHC population

- Heart Health @ Home VTC-based CHF NP supervised CHW program
Remote monitoring: Imprint model

Courtesy, Jeff Vergales MD
Comparative effectiveness study of remote examination tools (N. McDaniel et al)
• Blinded comparison of integrated multifunction exam tool vs stand alone digital exam tools
• *Multifunction device was better able to provide useable data to support a diagnosis*

Pediatric Imprint program: NICU (B. Vergales et al)
• Home telehealth and monitoring in NG fed preterm infants vs control population
• *Reduced LOS: Control group spent 8.1 +/- 3.9 days longer in the NICU*

Pediatric Imprint program: Cardiology (J. Vergales et al)
• Home telehealth and remote monitoring in single ventricle populations
• *Reduced LOS: Control group spent 3.0 days longer in the ICU*
• Intervention group had 90% complete oral feeding by 1 year of age vs 70% in control group
• 2 deaths in control group, none in intervention group

By Your Side Pediatrics home telehealth pilot (J. Plews-Ogan et al)
• Technology based remote examination program supplementing traditional home visits
• 7 families enrolled; 14 visits conducted
• *Tracking ED and clinic visits avoided*
Home telehealth for medically complex children

- Amidon, M et al, Advocate Children’s Hospital, Evaluating the role of telehealth in caring for children with Medical Complexity April, 2016
- 4 month study of medically complex infants discharged from PICU
- Randomized to home telehealth vs usual care
- Studied readmissions and cost utilization data (did not include transportation)
• Children spend a majority of their time in school settings
• 12-16% of children suffer from chronic conditions:
  – Diabetes
  – Asthma
  – Obesity
  – Autism
  – Behavioral health issues (ADHD, Depression)
• Many acute illnesses are amenable to telehealth facilitated evaluation and triage
• Adds value to existing school-based health services programs
• Many school districts do not even have school nurses

"The metrics are clear. Since we began Children’s Health School-based Telehealth™ in 2014, our absenteeism rate has dropped 2%, resulting in $500,000 of increased funding for our school district. Most importantly, our kids are benefiting from more classroom time and better health."

— Dr. Michael Pollard, Superintendent, Landerer Independent School District
• 21 grantees in 19 states
• Currently connected to 133 school sites
• To date, >10,500 encounters have been provided
• Services provided:
  – Primary care
  – Asthma
  – Obesity prevention
  – Behavioral health
  – Diabetes
  – Oral health services
• UVA e-BACKPAC program
  – 3 rural school districts in Bland, Martinsville/Henry and Patrick counties
  – Medical home, UVA and VIA
  – We are Martinsville (WAM) gamification project

Appreciation to Katharine Wibberly PhD and Jennell Charles NP
Behavioral health integrated into primary care
Ellen Davis, MD  co-PI

Virginia Regions
Northern (CNMC/Inova), Central (VCU/VTCC), Eastern (CHKD), Western (UVA/Centra), Southwestern (Carilion)
Five Regional Hubs of VMAP

- **Northern** - CNHS & Inova
- **Central** - VCU
- **Eastern** - CHKD
- **Western** - UVA & Centra
- **Southwestern** - Carilion

**Independent Cities Include:**
1. Alexandria
2. Bedford
3. Bristol
4. Buena Vista
5. Charlottesville
6. Chesapeake
7. Clifton Forge
8. Colonial Heights
9. Covington
10. Danville
11. Emporia
12. Fairfax
13. Falls Church
14. Franklin
15. Fredericksburg
16. Galax
17. Hampton
18. Harrisonburg
19. Hopewell
20. Lexington
21. Lynchburg
22. Manassas
23. Manassas Park
24. Martinsville
25. Newport News
26. Norfolk
27. Norton
28. Petersburg
29. Poquoson
30. Portsmouth
31. Radford
32. Richmond
33. Roanoke
34. Salem
35. Staunton
36. Suffolk
37. Virginia Beach
38. Waynesboro
39. Williamsburg
40. Winchester
Issues for consideration in telehealth: a host of details!

- Financial model
  - Funding of telehealth
  - Value proposition
  - Reimbursement models
- Clinical models chosen
- Technology choices
  - HIPAA compliance
  - Delivery platform scalability
  - Interoperability of devices
  - EMR integration
- Stark and anti-kickback laws
- Practice guidelines
  - AAP and ATA both developed pediatric guidelines
- Contracts to conform to all federal and state regulations
- Credentialing and privileging
- Licensure
- Malpractice
• Telemedicine payment parity legislation in 2010
  - 2019 Remote monitoring legislation for commercial plans
• Mental health/substance abuse models
  - Project ECHO; VMAP HRSA grant/state funds
• Broadband expansion
• Board of Medicine guidance document
• Virginia Department of Health partnerships
  - InnoVAte; CCC; Edie; VMAP
• Correctional telemedicine
• Virginia Medicaid program coverage since 2003; 2020 GA bills
  - Schools are now eligible as patient originating sites
  - Remote monitoring and eConsults now covered by a number of the MCOs
Public Policy Imperatives
Federal engagement and opportunities

- Health and Human Services (HHS)
  - HRSA grant and workforce programs
  - CMS payment for Medicare beneficiaries
    - FFS remains limited to rural for E&M visits
    - 2019 PFS
    - Innovation center programs
    - Value based models (ACO)
  - CDC, SAMHSA, NIH, FDA, AHRQ
- Drug Enforcement Administration/Department of Justice
- Federal Communications Commission (FCC/USAC)
- Department of Defense
- Veterans Health Administration
- USDA
- NASA
- State Department
- NSF
- Federal employee benefit plans
With the November 1, 2018 release of the 2019 Physician Fee Schedule, HHS Secretary Alex Azar affirmed:

“Today’s rules represent a big win, in terms of access to care in convenient and efficient ways by offering patients new choices in how they connect with doctors and caregivers.

For the first time, in 2019, Medicare will pay doctors for virtual check ins with their patients, virtual consultations between physicians, evaluation of remote pre-recorded images and video and an expanded list of telehealth services”
• **Mission**: To advance the Health System missions of clinical service, teaching, research and public service through the use of telehealth technologies

• **Vision**: To provide comprehensive and fully integrated healthcare capabilities that enable seamless access, patient care, and patient progression management for the UVAHS and our partners

• **Objectives**:  
  - Improve access and engagement  
  - Improve chronic disease management  
  - Improve transfer management and patient progression
Telehealth care is healthcare

Questions?
Thank you