



VIRTUAL
2020 NATIONAL
RYAN WHITE
CONFERENCE ON
HIV CARE & TREATMENT

Increasing Access to HIV Care via Telemedicine at a University-Based Ryan White Clinic

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Disclosures



- I have no financial disclosures

Outline



- Definitions
- Prior telehealth use in HIV and co-morbidities
- Our model
- Benefits and limitations
- Post-pandemic model
- Moving forward

What is *Telehealth*?



- Refers broadly to electronic and telecommunications technologies and services used to provide **BOTH** non-clinical care and clinical services at-a-distance
- Includes:
 - Patient and provider health education
 - Health administration
 - Telemedicine
- Technologies used:
 - Videoconferencing
 - Streaming media
 - Wireless communications

What is *Telemedicine*?

- Using technology to deliver clinical care at a distance
- A provider in one location uses a telecommunications infrastructure to deliver care to a patient at a distant site
- Includes:
 - Video visits
 - Telephone visits
 - E-consults



What is *Telemedicine*?



Synchronous

- Real-time patient and provider interaction using encrypted videoconferencing
- Most similar to traditional clinic or hospital encounters

Asynchronous

- Consultations without a live interaction
- Review of the patient's clinical history and data to formulate an opinion


What is *mHealth*?

- Delivery of mobile health
- Can incorporate wearable technology that is integrated with software
- Examples:
 - Smartphone apps
 - Wearables
 - Text reminders
- Used for:
 - Medication monitoring
 - Chronic disease management
 - Monitoring disease parameters



Not a Novel Idea



- Telemedicine has been around since early 20th century
- Used telephones and radios to transmit medical information from rural areas
- Current practices likely arose from developments in  that did remote monitoring
- Initially slow to develop due to regulations, costs, and possible lack of demand
- Has now grown exponentially
- Various models and settings have been studied for HIV and co-morbidities care delivery



Improved Virologic Suppression With HIV Subspecialty Care in a Large Prison System Using Telemedicine: An Observational Study With Historical Controls

- Retrospective cohort study
- Compared efficacy of HIV care via telemedicine (N=687) vs on-site management by non-specialized physician (N=514)
- Telemedicine resulted in:
 - Greater virologic suppression ($p < 0.001$)
 - Lower community viral load ($p < 0.001$)
 - Better patient adherence ($p < 0.001$)
 - Higher mean CD4 count

Table 1. Proportion of Subjects With a Suppressed HIV Load (First 6 Visits), Stratified by Baseline CD4 T-Lymphocyte Count

CD4 Category	Outcome ^a	Proportion Suppressed		χ^2	P Value
		Pretelemedicine	Telemedicine		
<350 cells/ μ L	1	59.2%	92.8%	69.5	<.001
	2	28.6%	83.7%	66.1	<.001
351–500 cells/ μ L	1	49.1%	95.8%	73.0	<.001
	2	19.4%	89.1%	58.7	<.001
>500 cells/ μ L	1	64.4%	87.6%	39.2	<.001
	2	17.8%	59.1%	33.0	<.001

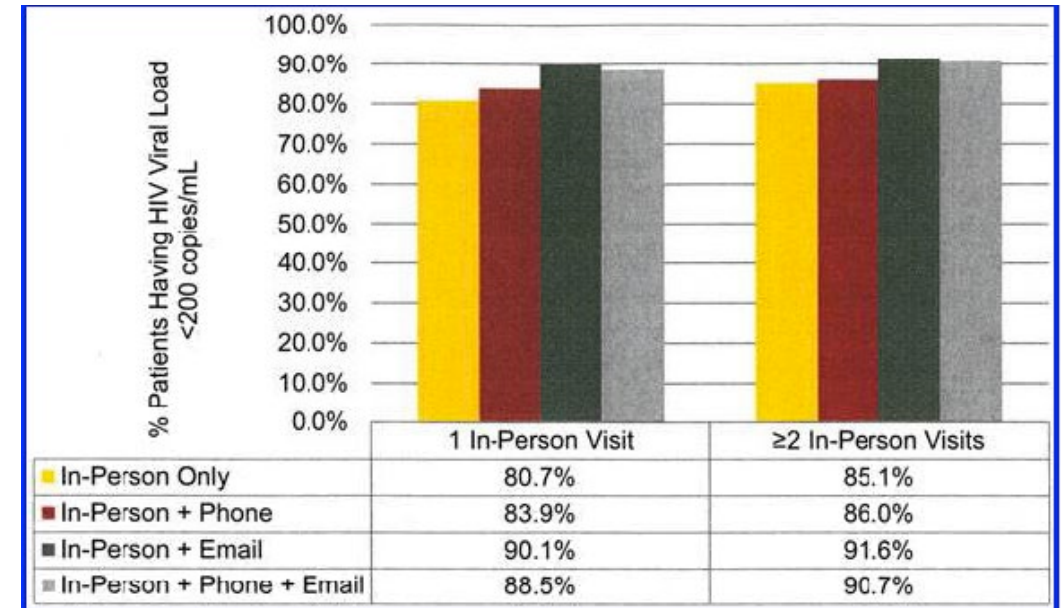
^a 1 = first 6 visits, 2 = visits 2–6, viral load not suppressed at first visit.

A New Multidisciplinary Home Care Telemedicine System to Monitor Stable Chronic Human Immunodeficiency Virus-Infected Patients: A Randomized Study

- Open-label, prospective, randomized study
- Internet-based care model covering entire management of **chronically infected HIV patients**
 - Offered in-person, videoconferencing, chat sessions or message exchanges
- Two arms: Virtual Hospital (N=42) vs Standard of Care (N=41)
- CD4, viral load, compliance levels, and quality of life did not vary significantly between the two arms
- **Virtual hospital was cost-effective, feasible, and a safe alternative** with no negative impact on clinical parameters or retention in care

Impact of Alternative Encounter Types on HIV Viral Suppression Rates in an Integrated Health System

- Retrospective cohort study by Kaiser Permanente
- Studied whether use of alternative encounters (phone and/or email) + in-person visits contributed to viral suppression (n=3114)
- **If one in-person visit was supplemented with an alternative encounter, this was comparable to rates of viral suppression amongst those with two in-person visits**



Physician's Perceptions of Telemedicine in HIV Care Provision:
A Cross-Sectional Web-Based Survey

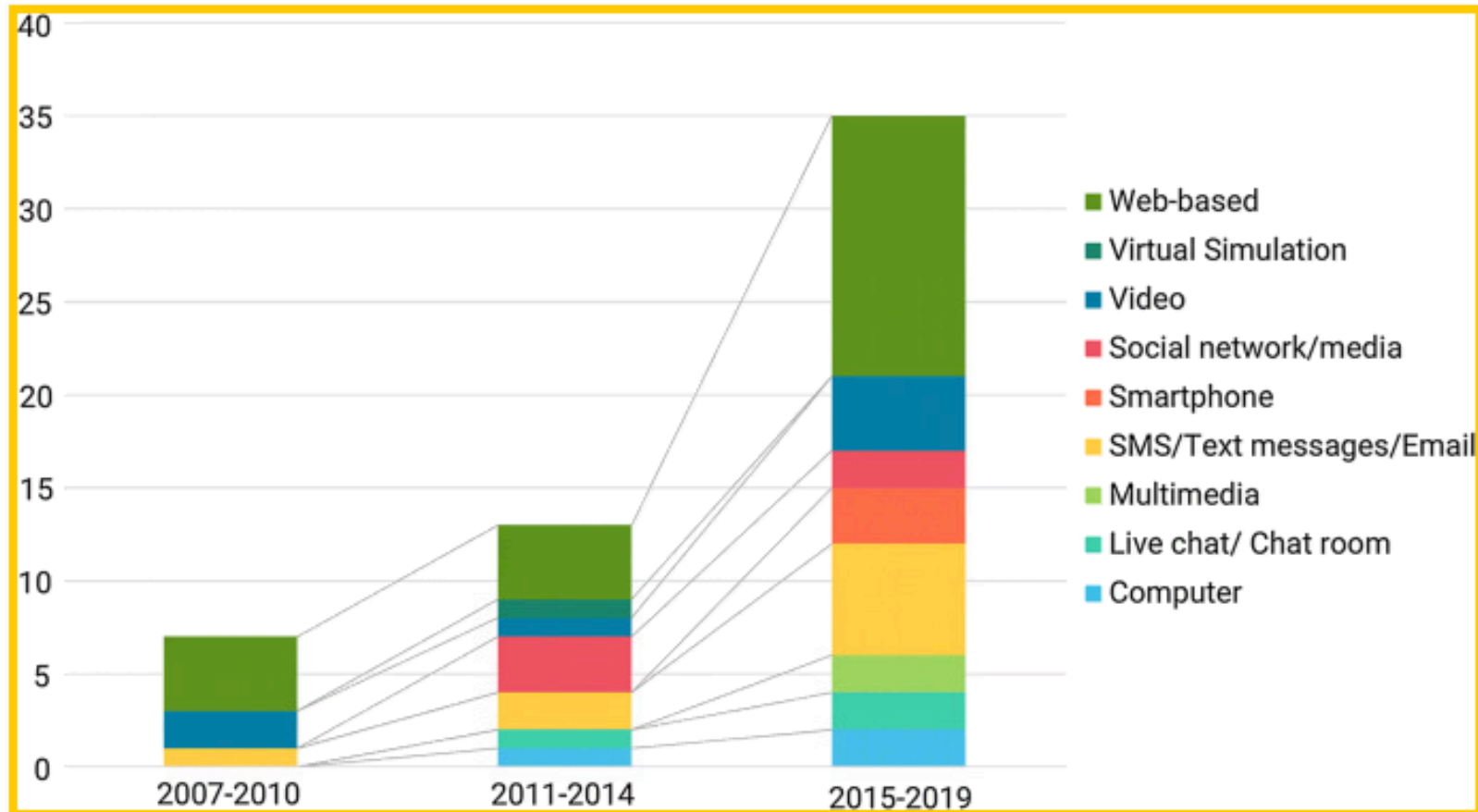


- Cross-sectional survey of ID physicians taking care of PLWH in Ontario, Canada
- 29/47 respondents used telemedicine
 - Primarily phone, email, teleconsultation
- Obstacle to adopting telemedicine is **lack of comprehensive assessment and providers don't feel adequately connected to patients**
- Majority agreed telemedicine could improve access and efficiency and reduce stigma

Short message service (SMS) reminders and real-time adherence monitoring improve antiretroviral therapy adherence in rural Uganda

- Randomized control trial exploring the **effects of text messages** on ART adherence
- Scheduled text reminders vs triggered text reminders after missed dose vs no text reminders (total n=63)
- **Adherence was 11.1% higher (p=0.04) and >48 hour lapses were less frequent (p=0.02) in scheduled group vs no text reminders group**
- No differences in viral load were seen

Telehealth for HIV Prevention



Trend of eHealth interventions overtime

Telehealth for HIV Prevention



Modality	Function and rationale	Examples	Funding/partnerships
Provider-to-patient	Remote PrEP prescribing; designed to overcome geographic barriers, connect at-risk persons directly to PrEP-trained providers, and may reduce barriers such as fear of discrimination.	PrEPTECH, a pilot program in California that enrolled participants via a mobile-friendly website, with PrEP intake appointments by phone, opt-in text message adherence reminders, and PrEP medication by mail.	California DOH; University of California, Los Angeles; YTH.org ; Gilead
		Gay City, an LGBTQ community center in Seattle, where HIV counselors provide on-site care and PrEP is prescribed using videoconference visits with a remote PrEP specialist.	Washington State DOH; University of Washington; Gay City community center
		PrEPIOWA, an intervention in which clinical pharmacists prescribe medications and counsel patients via telemedicine, with physician support available as needed.	Iowa DOH; University of Iowa
		Plushcare.com , a mobile/web platform that offers videoconference visits for PrEP prescribing in many states.	For-profit
		Nurx.com , a mobile/web platform that offers PrEP after a text message-based intake by a physician.	For-profit
Provider-to-provider	Distance mentorship and clinical consultation for community PrEP prescribers via videoconference with Infectious Disease specialists plus a multidisciplinary support team; designed to build capacity of primary care providers to prescribe PrEP.	The Mountain West AETC ECHO program offers quarterly PrEP didactics and case-based discussion via videoconference, connecting community PrEP providers in six states with University of Washington specialists, including ID providers as well as pharmacy, psychiatry, and social work experts.	Washington State DOH; University of Washington; HRSA
Store-and-forward consults ("e-Consults")	EHR-based specialist consultation without a face-to-face visit; designed to reduce barriers to access to PrEP specialists, support primary care provider prescribing, and build capacity of non-specialists to prescribe PrEP.	The Veteran's Health Administration has a well-established e-Consult system to support PCPs in PrEP prescribing and the University of Washington recently introduced Infectious Disease e-Consults, including an option for PrEP-prescribing guidance.	



Integrated, Co-located, Telemedicine-based Treatment Approaches for Hepatitis C Virus Management in Opioid Use Disorder Patients on Methadone

- Prospective, cohort study
- N=62; 24% HIV co-infected
- Biweekly telemedicine evaluations with a hepatologist after onsite education and baseline labs
- Participants received Hep C medication at opioid substitution therapy clinic
- 45 patients were treated with 42 achieving viral eradication
- Without treatment integration, patients may never have sought care

Putting it Together so Far

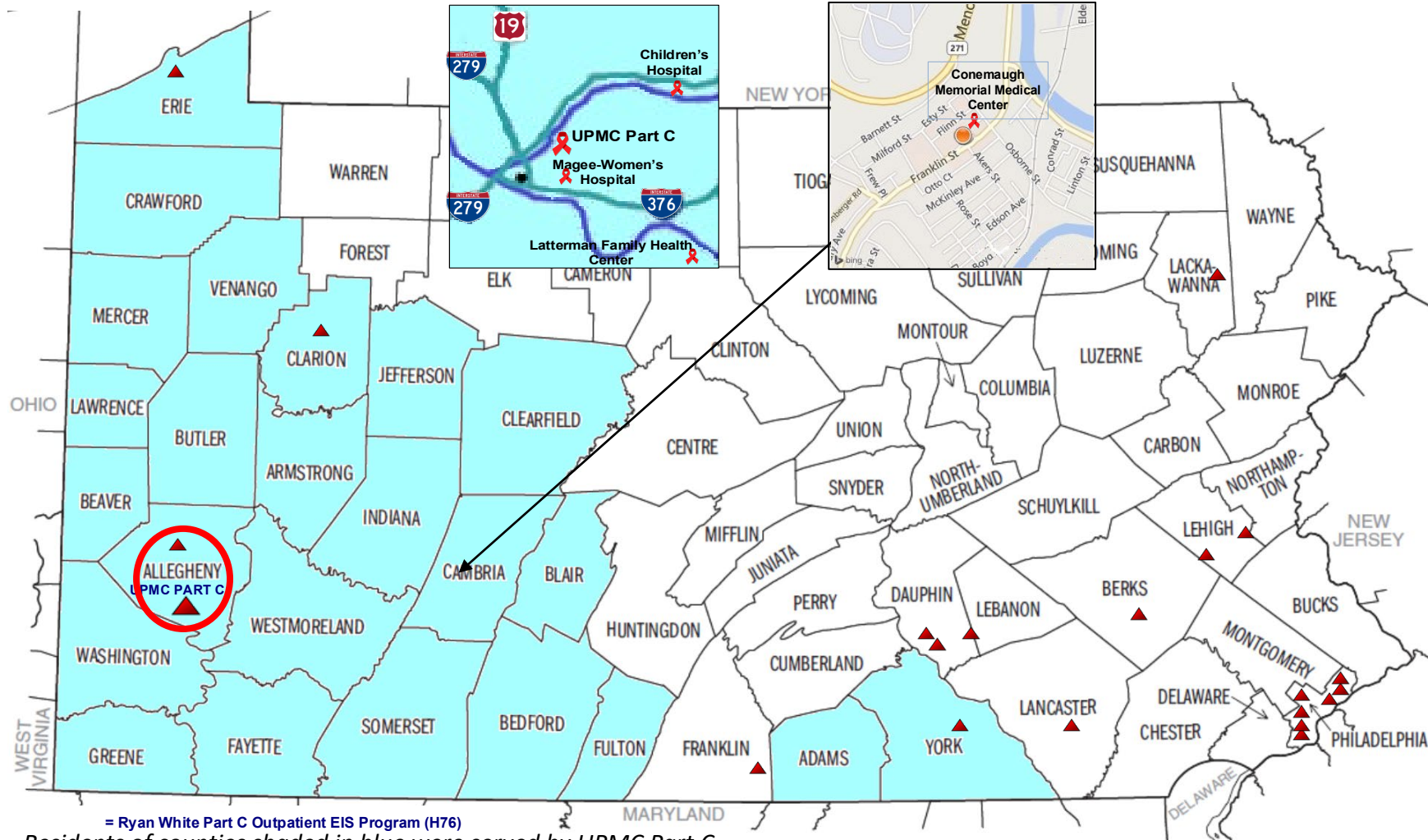


- We have been doing this for a long time
- Multiple models to deliver telehealth
- Clinical and patient outcomes vary, but most show increased access to subspecialty care and a cost-effective alternative
- So, how do we take telemedicine a step further and provide HIV care where it's lacking i.e. rural areas?

Our UPMC Part C Service Map



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▲ = Ryan White Part C Outpatient EIS Program (H76)
Residents of counties shaded in blue were served by UPMC Part C

Brief UPMC Program Overview



- RWHAP funding began: Part C in 1994; Part D in 2001
- Client demographics:
 - ~1850 clients
 - Median age range: 51.6 years
 - Gender: 75% Male; 25% Female
 - Ethnicity:
 - 48.5% Caucasian
 - 45% African-American
 - 6.5% Other
- Services provided:
 - HIV and Primary Care
 - Pharmacy
 - Social work
 - Behavioral Health
 - Peer Advocate
 - Registered Dietitian
 - Anal Dysplasia Clinic
 - Pain Clinic + Physical Therapy
 - Medication-Assisted Treatment
 - Women's Health
 - HIV Pediatric Care
 - PrEP
 - STI testing and treatment
 - On site laboratory
 - Clinical Research

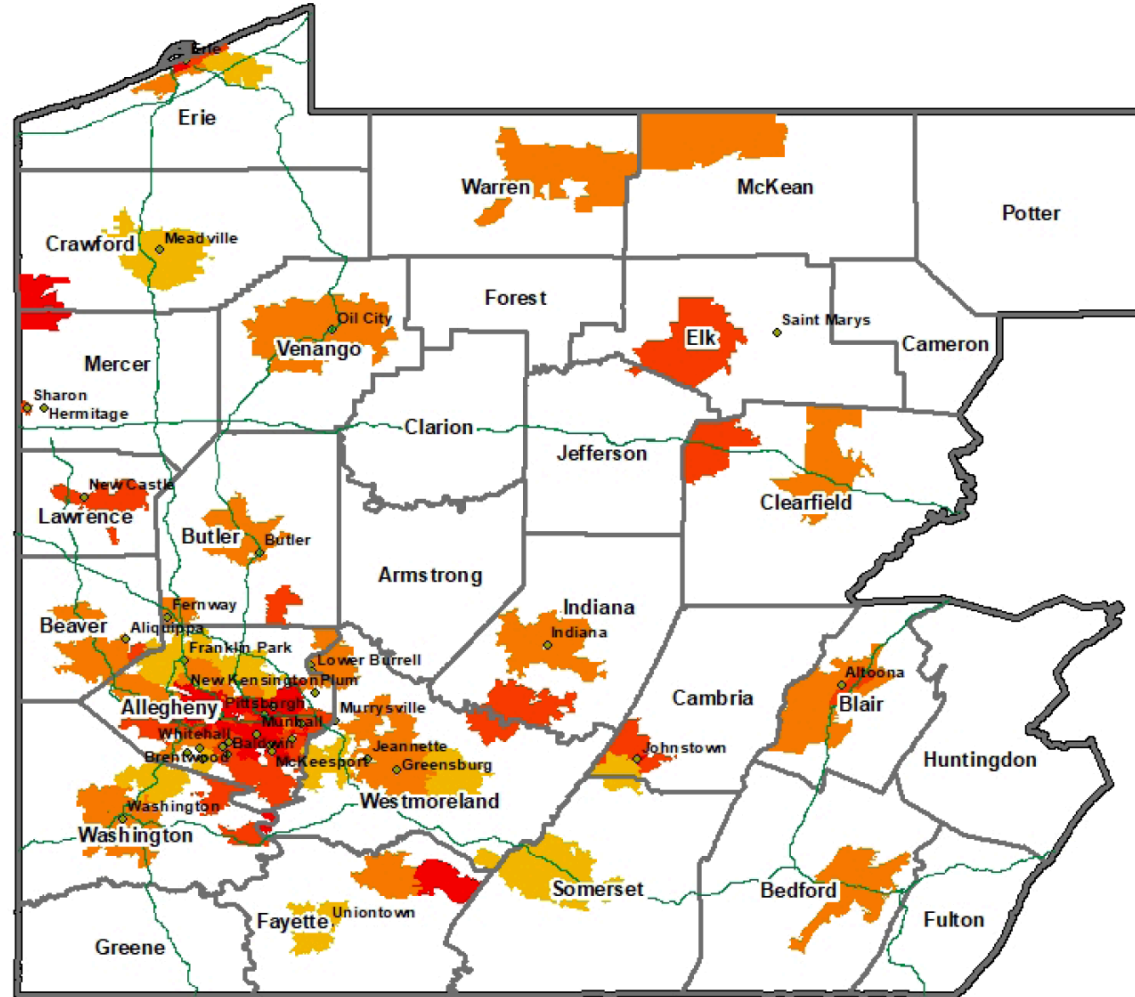
Where are PWH in Western PA?

UPMC Memk
 (5/2)

= RW Clinic

Legend

- ◆ Cities
 - Major Roads
- HIV Prevalence**
- 0%
 - 0.01% - 0.07%
 - 0.08% - 0.11%
 - 0.12% - 0.21%
 - 0.22% - 2.94%



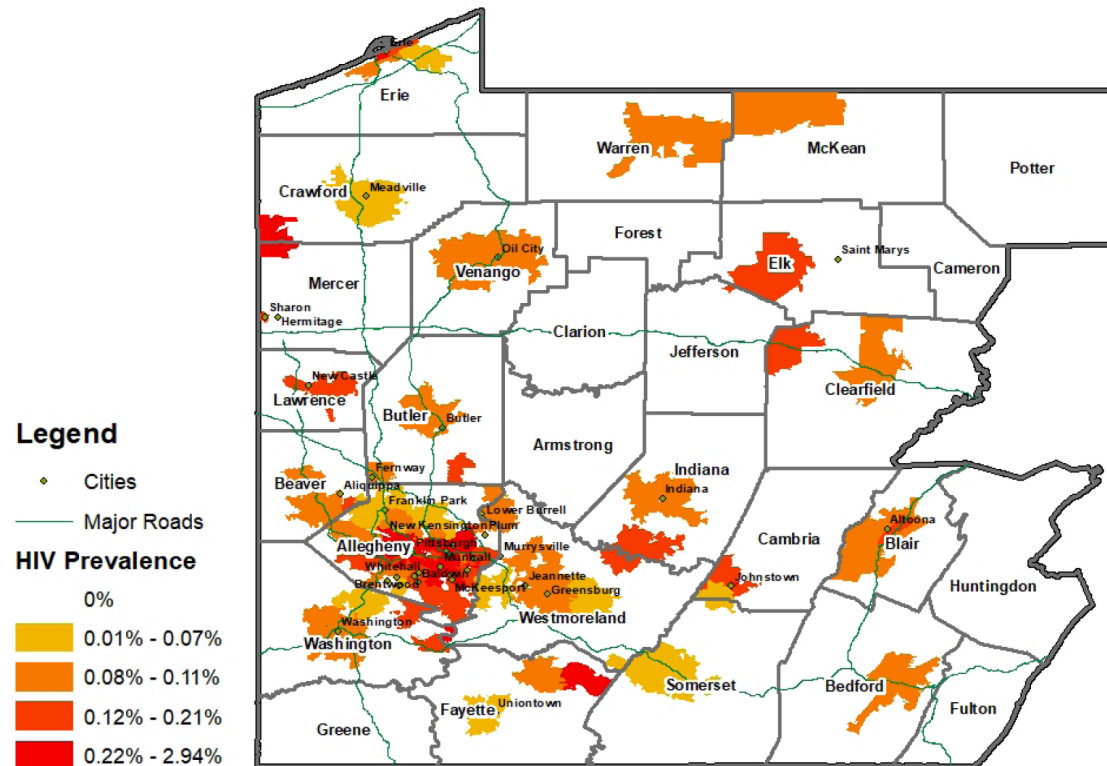
Barriers to Care



- Transportation, transportation, and transportation
- Lack of sub-specialty care in rural communities
- Primary care providers unfamiliar with HIV care or unwilling to treat
- Mobile HIV clinics occur less frequently with more patients to see in a short amount of time
- Stigma

Our Telemedicine Model

- We considered all these challenges and decided to take the care where it's needed the most
 - All while remaining in Pittsburgh, PA



Model Description



- Began in November 2019
- Two regional locations - both rural HPSA
 - Altoona, PA
 - Bedford, PA
- UPMC has dedicated telemedicine medical practice sites
 - Patient is seen at this clinical location using audio and video interface
- Trained tele-presenter (registered nurse) with the patient in the exam room
- Board-certified ID physician is located in Pittsburgh, PA
- Monthly half-day clinic at each location

Clinic Description



- Ability to conduct complete history and physical exam
 - Telepresenter assists with the exam
 - Use of Bluetooth stethoscope, ophthalmoscope, otoscope
 - Obtain images of skin findings to share in note and/or with specialist
- Only confidential, encrypted, HIPAA compliant software used
- Clinic notes and orders completed electronically in EMR
- Patient has 24/7 access to clinic support in Pittsburgh via phone and secure EMR messaging



Other Services



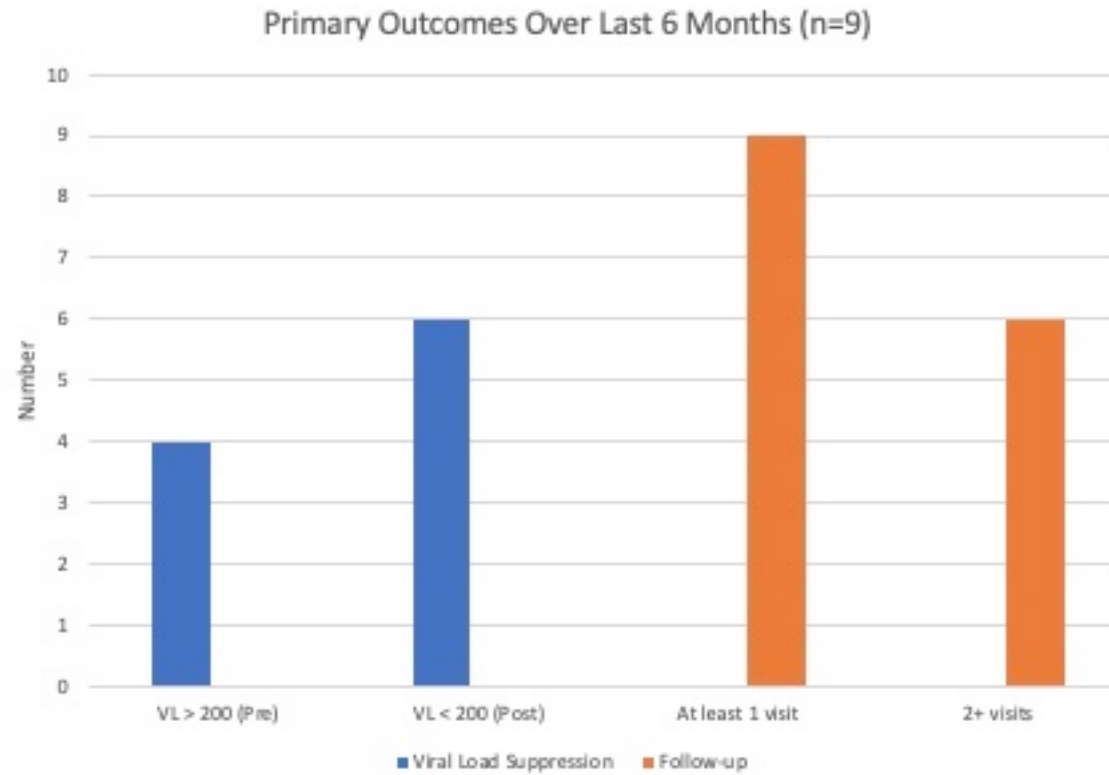
- Partnered with local case management
 - Dietitian services provided
- Access to pharmacy and behavioral health services in Pittsburgh via phone, if needed
- Patients linked to local primary care provider, if needed
- List of local subspecialty referrals
- Diagnostic testing available at nearby labs - results sent to provider via EMR
- Immunizations at pharmacy or PCP clinic

Population Characteristics



Characteristics (N = 9)	
Median Age (years):	54 (range: 19 - 65 years)
Ethnicity (#):	Caucasian = 7; African-American = 2
Gender (#):	Males = 7
Median length of HIV diagnosis (years):	9 (range: 0 - 32 years)
On INSTI based regimen (#):	7
On salvage ART regimen (#):	0
On prophylaxis (#):	0
Local PCP (#):	9
Most common barriers to care:	Transportation; lack of HIV care (specialist retired)

Primary Outcomes



Secondary Outcomes



- ART regimen updated = 3 patients
 - All remain virally suppressed
- No-shows over last 6 months = 3/23 scheduled visits (13.0%)

Conclusions



- Small sample size thus unable to draw strong conclusions
 - Affected by global pandemic
- Can remove transportation barrier
- Capable of achieving viral suppression
- Ability to have good retention in care
- **Patient comments:**
 - “Telemedicine has been more convenient from travel perspective”
 - “Enjoy more options for scheduling as monthly clinic”

Benefits of this Model



- Savings in transportation costs and time
- Promotes linkage to care when limited by geography or disabilities
 - Increased retention in care
- Care provided by HIV subspecialists
 - Increased virologic suppression
 - Reduction in HIV related morbidity and mortality
 - Reduction in transmission to others
- High-quality, evidence-based care backed by an academic medical center
- Complete physical exam and history in a safe, and confidential clinic space
- Direct communication with PCP and connection to RW clinic services
- Decreased stigma
- Reduced provider burnout

Limitations of this Model



- Need for staffing the local telemedicine clinical site
- Reliable internet connection
- Access to software and hardware
- Labs and other health maintenance items may be delayed
 - No on-site laboratory
- Referrals may be delayed due to lack of specialty care in rural area
 - Transportation limitation
- Patient comfort
- Lack of physical touch

Billing/Data Reporting Considerations



- Both clinic sites are part of our UPMC HIV program
- Patients are served by our Part C funds
- Included in our HRSA data reporting
- Clinic sites located in HPSA areas and eligible for telemedicine under Medicare rules
- Billing and reimbursement may change as we add more sites
 - Contracting with other non-profits
 - Who do the patients belong to and who does the data reporting?
- Telemedicine rules are evolving given current situation

Considerations with this Model

Digital Divide

- Aging population with HIV
- Trust and privacy concerns
- Non-English speaking clients

Etiquette

- Staying professional and on task
- Incorporating learners
- Missing the human touch

Triage

- Who is right for this visit?
- Delay in labs and preventive care

Hidden Costs

- EMR, software and hardware
- Telemed centers
- Trained telepresenters
- Physician licensing
- Call coverage
- Provider training



Time Management

- On time patients
- Technical difficulties

Reimbursement

- Different payer rules
- Delayed payments due to changing processes

Care Delivery

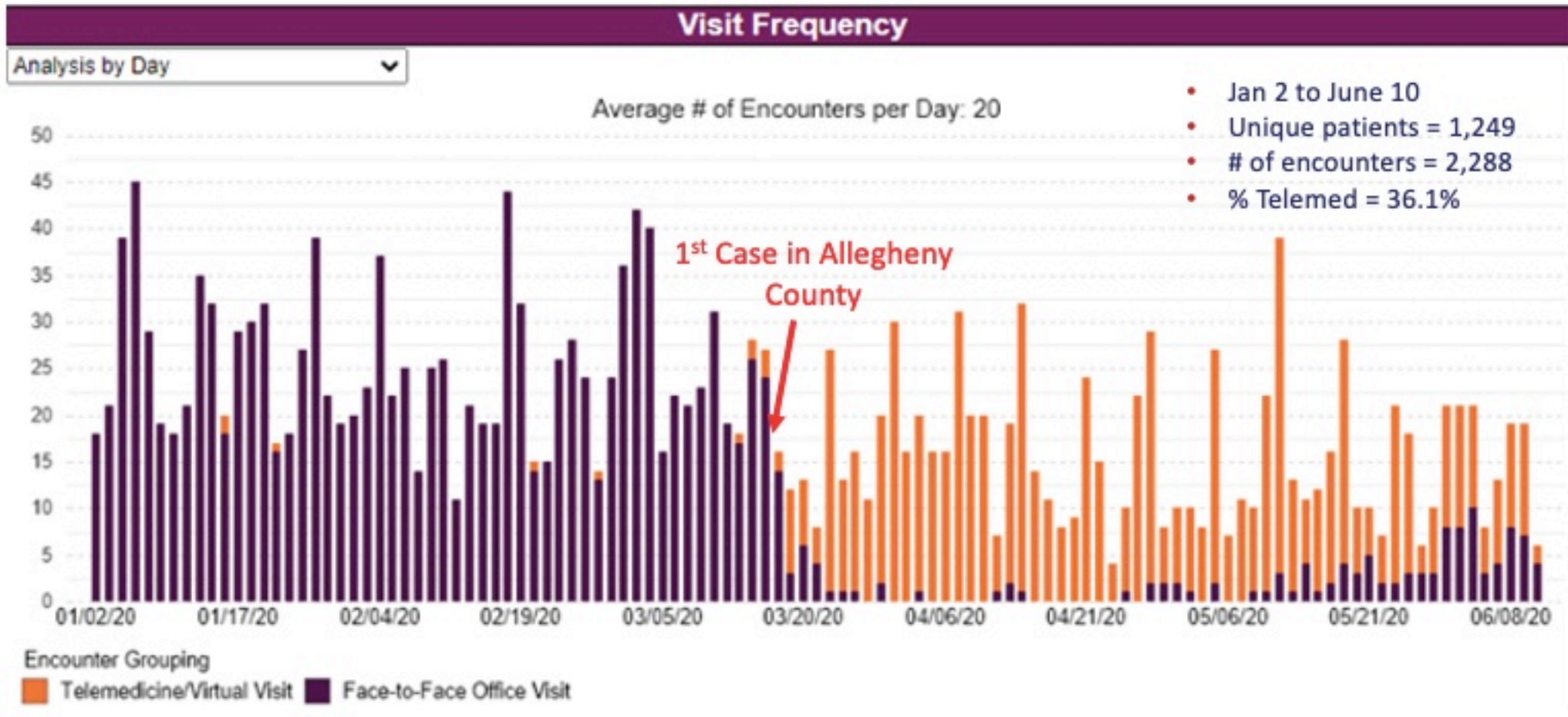
- Contracts
- Intersection of private entity and non-profit
- Whose patients?
- Lab access

COVID-19 Happened

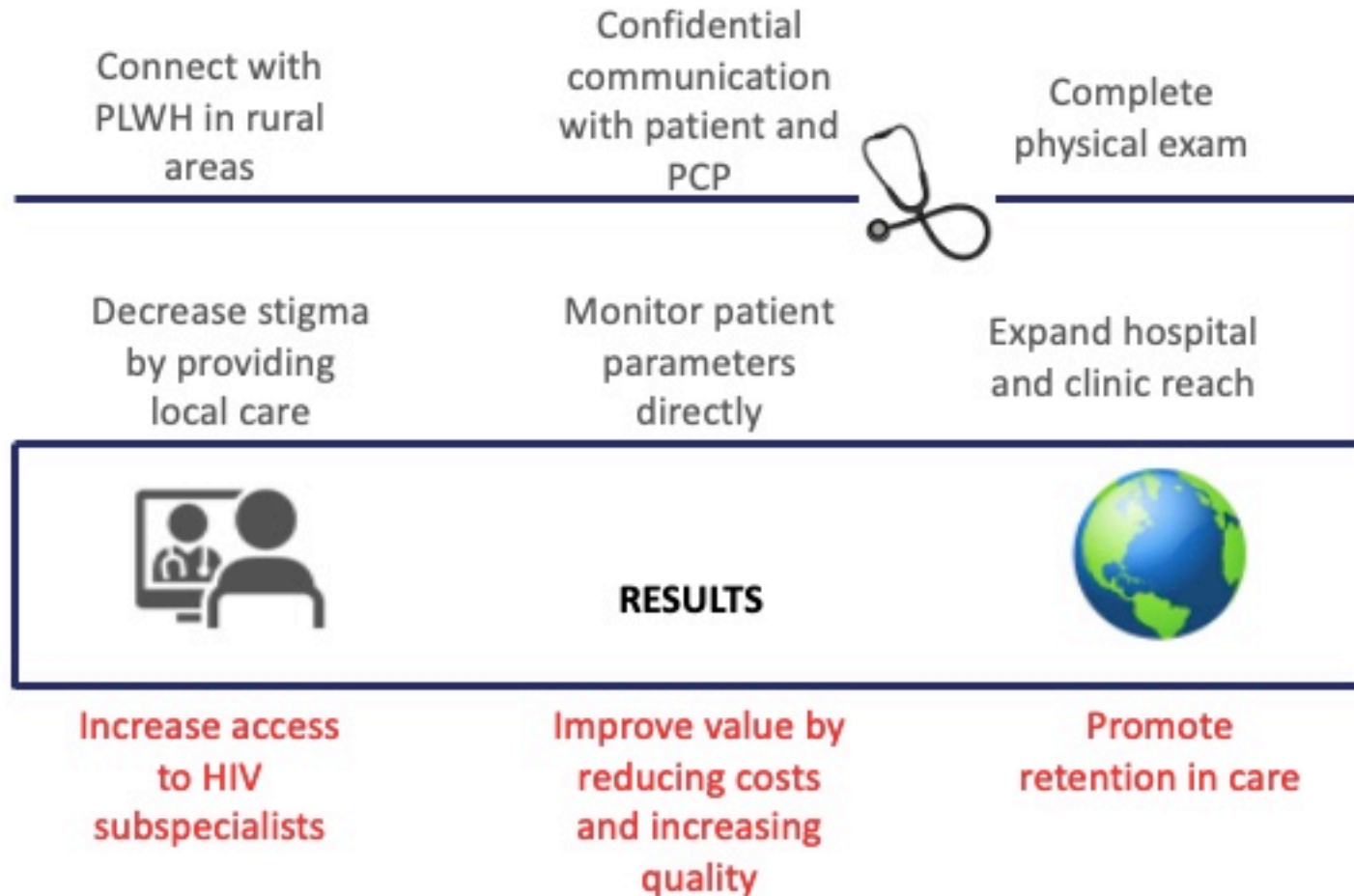


- First confirmed case in Allegheny County - March 13th, 2020
- By March 16th, 2020 - significant shift from face-to-face to virtual visits across the system
- Medicare made rapid, frequent changes to permit greater access to virtual health for patients regardless of geography & modality
 - “Traditional” telemedicine clinics temporarily closed to protect patients, staff
 - MyUPMC video visits preferred method of seeing patients
 - Medicare temporarily permits other non-HIPAA compliant modalities
 - Phone visits are incorporated

UPMC HIV Outpatient Activity



What can this Model Achieve?



Moving Forward



- Expand to other rural areas in western Pennsylvania
- Promote awareness of our current clinics
- Implementing video visits with behavioral health
- Preparing for potential COVID-19 surge

Summary



- Convenient, accessible care model for RW patients
- Experienced RW providers, state-of-the-art care
- Equipment, IT support needed
- Telemedicine regulations vary from state to state
- Evolving reimbursement landscape



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Thank you!

Questions?

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