# Program Evaluation using Quantitative & Qualitative Methods

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# Disclosures

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# Presentation Goals

- Share strategies and approaches used to evaluate demonstration project
- Discuss evaluation performance measurement plan (EPMP)
- Overall project demonstration
- Special Evaluation
- Report results & overall findings
- Share recommendations & next steps

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# Evaluation Performance Measurement Plan (EPMP)

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# Project Components

| Component | High-Level Activities |
|---|---|
| **I. Capacity Building** | Establish a Community Advisory Board<br>Develop materials and training sessions for VV use<br>Train key stakeholders to offer and provide VVs to PWH<br>Tailor current UF TM program for care to PWH<br>Assess, purchase and install equipment required for VV use |
| **II. Marketing & Patient Recruitment** | Assess current marketing needs<br>Develop marketing plan & strategies to promote TM/VV<br>Promote program using various strategies & media<br>Establish metrics for marketing dissemination via media |
| **III. VV services for PWH** | Develop evaluation performance measurement plan (EPMP)<br>Identify and enroll eligible patients<br>Provide clinic and case management services to eligible patients using TM |
| **IV. Costing** | Assess costs to implement project into existing healthcare infrastructure<br>Assess costs/cost-savings to patients<br>Assess costs/cost-savings to healthcare system |

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# Overall Evaluation: Quantitative

| Quantitative | Questions |
| --- | --- |
| **VV services for PWH** | • What services were provided to PWH via VV?<br>• To what extent did PWH of color use VV services?<br>• To what extent did PWH in VV remain in HIV care and achieve/maintain viral suppression? |
| **Costing** | • What is the cost of providing VV to PWH?<br>• What is the cost of project development?<br>• What is the cost to PWH for in-person visits?<br>• What is the cost to PWH for VVs? |

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# Project Components

| Special Evaluation | Questions |
| --- | --- |
| **Utilization** | • To what extent does VV affect provider-to-patient staffing ratio?<br>• To what extent does VV ameliorate the effect of structural barriers that affect PLWH access to and utilization of HIV care and treatment services? |
| **Facilitators & Hindrances** | • What factors facilitated and hindered VV implementation?<br>• What good practices were identified relative to VV utilization by PLWH, the delivery of HIV care services by physicians/health care providers, and VV capacity building? |
| **Satisfaction** | • How satisfied are providers with training?<br>• How satisfied are PWH with VV?<br>• How satisfied are PWH with in-person?<br>• How satisfied are providers with VV? |

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# Methodology

# Quantitative Costing Analysis

## Micro-costing method

- Material costs
- Personnel costs
- Project Implementation
- Patient Costs
  - In-person
  - VV

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# Methodology Tips for Quantitative Evaluation

Identify all existing sources that can be used to access data/information at program start

Acquire institutional/ethics board approval

Coordinate with teams housing data to develop systematic data extraction/capture procedures

Create data dictionaries to identify information

| Construct / Information | Variable(s) | Source | Person Collecting Information / Producing Report | Frequency |
|---|---|---|---|---|
| **Sociodemographic information - patients** | Age, date of birth (DOB), birth sex, gender identity, race, ethnicity, HIV diagnosis date, pregnancy at time of visit, heterosexual contact, sexually transmitted diseases (STD) screening date and result, years being a patient at UF Health, Medical Record Number (MRN), MyChart enrollment status and date, address, zip code, date of service, place of service, servicing provider name, payor name, benefit plan name | EPIC CAREWARE | TM team member / Data Analytic Reporting Committee (DARC) / Epic Data Analysts/ UF CARES staff | At baseline |
| **Sociodemographic information -provider** | Name, age, race, ethnicity, credentials, TM training | Provider | TM Clinical Educator | At baseline |
| **TM Eligible** | Eligibility of PWH | EPIC | Data Analytic Reporting Committee (DARC) / Epic Data Analysts | Weekly |
| **TM Capacity** | Capacity for PWH | Patient | TM team member | Each patient encounter |
| **TM Engagement** | Number of PWH receiving clinical and case management services via TM | EPIC/ Clinic Administrators/ Case Workers/ Providers | TM team member / DARC | Monthly |
| **TM Enrollment & Retention** | Scheduled, missed and kept appointments → TM<br>Scheduled, missed and kept appointments → in-person | EPIC | Ambulatory Services Administrator | Monthly |
| **Cost Analysis** | TM visit and TM program development costs<br>In-person visits costs | Patient Billing | TM team member | Each encounter |
| **Clinical Outcome** | Viral load: viral load lab date and result; CD4 lab date and result; antiretroviral (ART) prescription status | EPIC | EPIC/DARC | Monthly |
| **Evaluation of Telemedicine Training** | Provider Assessment of TM trainings | Provider | TM Clinical Educator / Training Facilitator | At time of Training |
| **Satisfaction** | Patient Satisfaction Survey – TM patients | Patient | Survey administered electronically, by phone, or on paper by TM team member, UF CARES case manager, CBO case manager, or UF CHFM CSR | Each patient encounter |
| **Satisfaction** | Patient Satisfaction Survey – In-person patients | Patient | Survey administered by UF CARES CSR or Case Manager | Each patient encounter |
| **Satisfaction** | Provider Satisfaction Survey | Provider | Survey administered electronically | Each provider TM encounter |

# Qualitative Methods
# UF IRB approval #201902889

## Create surveys to answer specific questions

Focus group guides

Satisfaction surveys: VV and in-person visits

Provider training pre- and post- assessments

## Conduct focus groups with stakeholder groups

Create process for virtual delivery

Invite stakeholders from various settings

Record/transcribe and conduct axial coding & analysis

## EVALUATION QUESTIONS

1. Extent VV affects provider-to-patient ratio
2. Extent VV ameliorates structural barriers affecting VV access & use
3. Facilitating & hindering factors
4. Good practices & lessons learned
5. Provider training
6. PWH satisfaction
7. Provider satisfaction

## DATA SOURCES

- EPIC medical records
- Focus Group guides constructed for each stakeholder group
- Training  evaluation
- Satisfaction surveys

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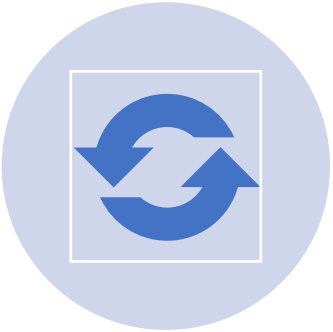
# Methodology Tips for Qualitative Evaluation

Engage stakeholder groups, including CAB members at evaluation start

Develop focus group guides based on stakeholder feedback/guidance



Map questions back to specific questions to be answered

Accommodate for virtual delivery mode

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# Results

# Results: Overall Demonstration

**Total Engagement to Date** (8/17/20)

- 368 unique patients
- 43.7% PWH seen at UFHealth
- 616 total medical visits
  - Psychology
  - Pharmacy
  - Nutrition
  - Case Management

**Pre COVID-19**

As of 8/26/19:

- 71 Virtual Visits conducted
- 58 unique patients

As of 2/10/20:

- 178 Virtual Visits conducted
- 115 unique patients

**Post COVID-19**

As of 3/30/20:

- 257 Virtual Visits conducted
- 168 unique patients

# PWH VV Utilization vs. Office Visit Utilization

| Sociodemographic Characteristic (9/1/18-2/28/2020) | Virtual Visit n | (%) | Office Visit n | (%) | p value |
|---|---|---|---|---|---|
| Health Zones (HZ) | | | | | < .0001 |
| I: Urban Core | 22 | (22) | 1,654 | (47) | |
| II: University/Emerson | 21 | (21) | 500 | (14) | |
| III: Mandarin & Southside | 9 | (9) | 143 | (4) | |
| IV: Westside | 12 | (12) | 511 | (15) | |
| V: Northside | 9 | (9) | 286 | (8) | |
| VI: Beaches | 1 | (1) | 24 | (<1) | |
| VII: Outside of Jacksonville | 28 | (27) | 366 | (11) | |
| Race | | | | | 0.02 |
| Black | 65 | (62) | 2,691 | (77) | |
| White | 36 | (35) | 633 | (18) | |
| Other/Unknown | 3 | (3) | 174 | (5) | |

# PWH VV Utilization vs. Office Visit Utilization

| Sociodemographic Characteristic (9/1/18-2/28/2020) | Virtual Visit n | (%) | Office Visit n | (%) | p value |
|---|---|---|---|---|---|
| Telemedicine/VV Covered | | | | | < .0001 |
| Yes | 47 | (44) | 1,425 | (41) | |
| Depends: Contact Insurer | 17 | (16) | 187 | (5) | |
| No | 43 | (40) | 1,894 | (54) | |
| Health Zones (HZ) | | | | | < .0001 |
| I: Urban Core | 22 | (22) | 1,654 | (47) | |
| II: University/Emerson | 21 | (21) | 500 | (14) | |
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| Other/Unknown | 3 | (3) | 174 | (5) | |

# PWH VV Utilization: Pre-COVID vs. Post-COVID

| Sociodemographic Characteristic (9/1/18-2/28/2020) | Virtual Visit n | (%) | Virtual Visit n | (%) | p value |
|---|---|---|---|---|---|
| **Average Age at Visit**, mean (SD) | 104 | 42.9 (12.2) | 3,506 | 43.1 (13.8) | ns |
| **Ethnicity** | | | | | 0.71 |
| Hispanic | 4 | (4) | 124 | (4) | |
| Non-Hispanic | 95 | (92) | 3,271 | (94) | |
| Unknown/Refused | 5 | (5) | 103 | (3) | |
| **Gender** | | | | | 0.54 |
| Female | 47 | (44) | 1,690 | (48) | |
| Male | 58 | (55) | 1,798 | (51) | |
| Transgender | 1 | (1) | 22 | (<1) | |
| **Risk Factors** | | | | | 0.77 |
| Heterosexual | 17 | (39) | 1,134 | (51) | |
| Intravenous Drug User (IDU) | 1 | (2) | 74 | (4) | |
| Men Having Sex with Men (MSM) | 17 | (39) | 550 | (29) | |
| MSM & IDU | 0 | (0) | 16 | (<1) | |
| Not Specified | 2 | (5) | 55 | (3) | |
| Perinatal | 3 | (7) | 89 | (5) | |

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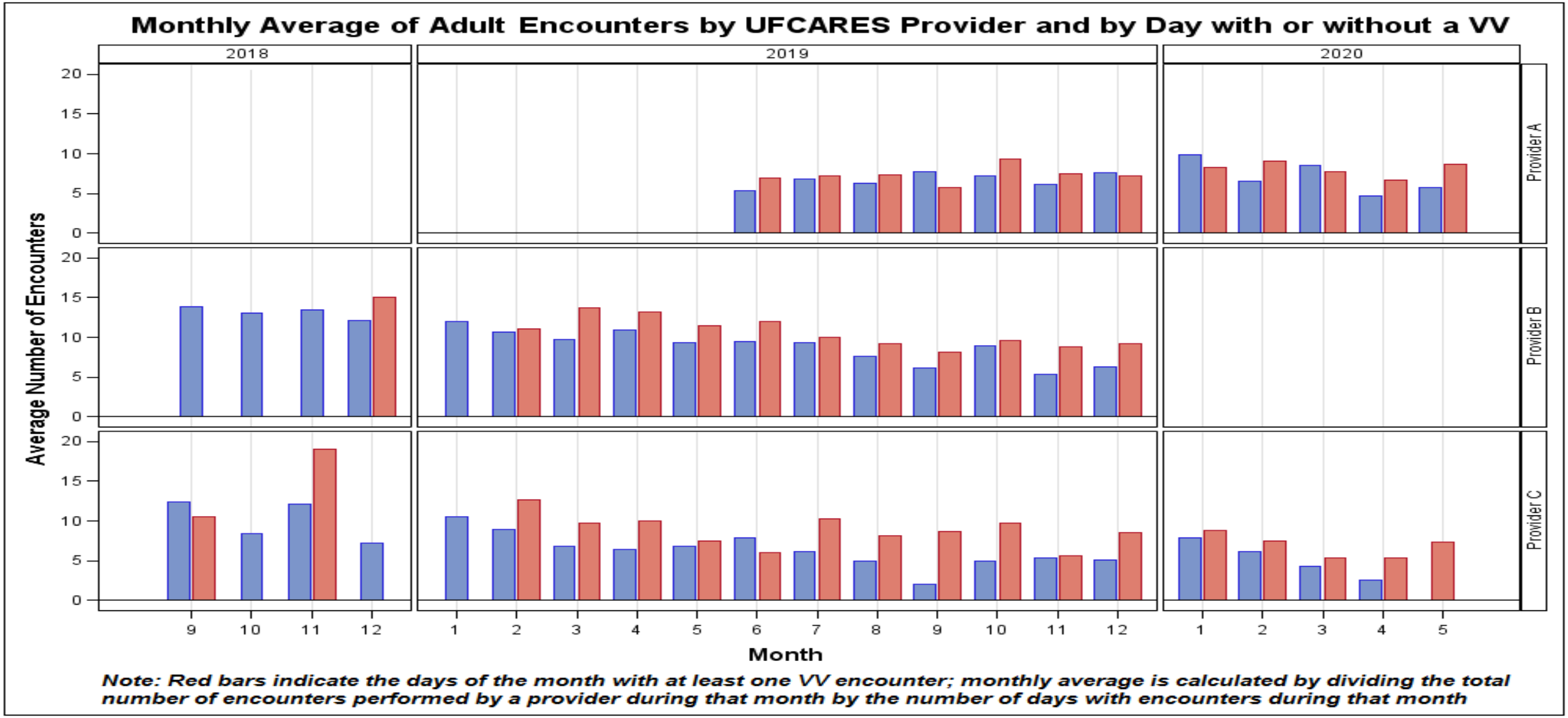
# Monthly Average on VV days/non-VV




*Note: Red bars indicate the days of the month with at least one VV encounter; monthly average is calculated by dividing the total number of encounters performed by a provider during that month by the number of days with encounters during that month*

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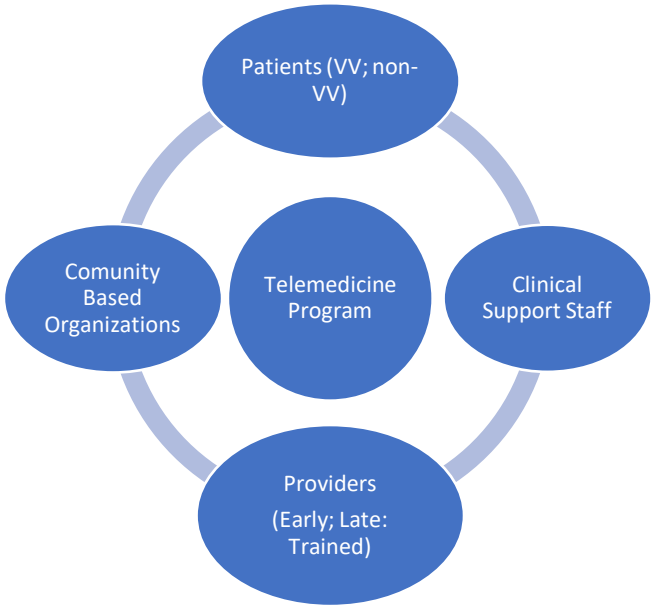
# Results: Costing

| | Quarter 1& 2 (9/1/18 – 2/28/2019 | Quarter 3 (3/1/2019 - 5/31/2019) | Quarter 4 (6/1/2019 – 8/31/2019) |
|---|---|---|---|
| **Cost of project development** | **111,646.20** | **28,707.81** | **35,425.09** |
| Cost of materials | 56,899 | 0 | 10,138.92 |
| Cost of personnel | 57,747.22 | 28,707.81 | 25,286.17 |
| **Cost of project implementation** | **No data collected** | **12,108.60** | **12,468.60** |
| Fees for case manager for screening | No data collected | 7803 | 8163 |
| Fees for providers (N=1) | No data collected | 4305.6 | 4305.6 |
| **Cost to PLWH for in-person visits** | **16.06 (1821)** | **10.75 (1705)** | **7.41 (1760)** |
| Average out-of-pocket cost per patient (n) | 7.67 (1821) | 1.10 (1705) | 1.21(1760) |
| Average cost per patient for travel (n) | 8.38 (1821 | 9.65 (1705) | 6.20 (1760) |
| **Cost to PLWH for VVs** | | | |
| Average out-of-pocket cost per patient (n) | 0(18) | 0(18) | 0(54) |
| Savings per patient for travel (n) | 8.68 (18) | 11.07 (18) | 6.44(54) |

# Results: Special Evaluation

| Focus Group Type | # of Focus Groups | # of Participants | # of Projected Participants | % of Goal for Projected Participants |
|---|---|---|---|---|
| **VV- PWH** | 3 | 12 | 20 | 60 |
| **Non-VV PWH** | 3 | 9 | 20 | 45 |
| **CBOs** | 1 | 3 | 5 | 60 |
| **Trained Providers** | 1 | 4 | 10 | 40 |
| **UF CARES Clinical Support Staff** | 1 | 6 | 10 | 60 |
| **Providers Late Adopters** | 2 | 6 | 10 | 60 |
| **Providers Early Adopters** | 2 | 6 | 10 | 60 |
| **Total** | 13 | 46 | 85 | 55 |



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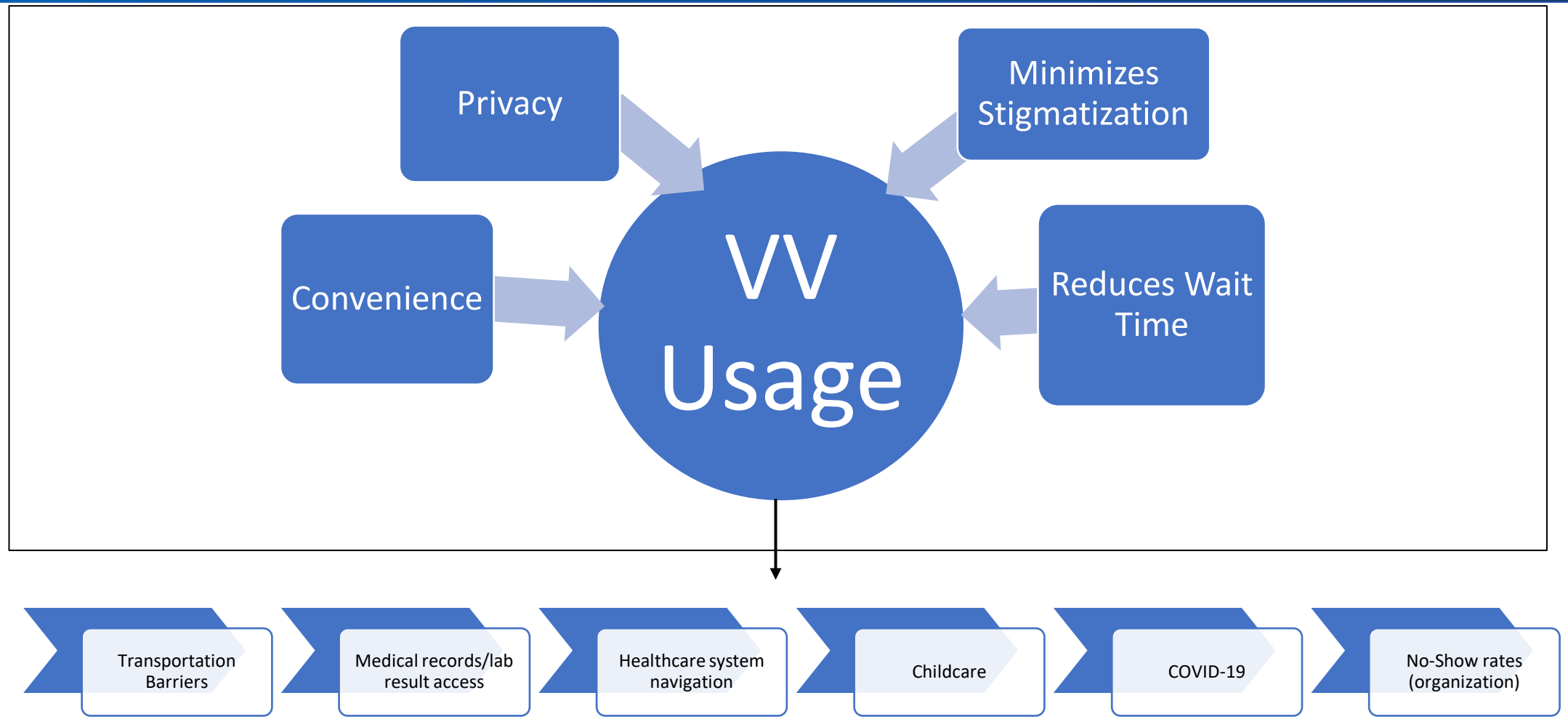
# Results: Special Evaluation

| | VV PWH N (%) | No-VV PWH N (%) | CBOs N (%) | TP N (%) | EAP N (%) | LAP N (%) | CSS N (%) |
|---|---|---|---|---|---|---|---|
| **Total #** | 12 | 7 | 3 | 4 | 6 | 6 | 6 |
| **% of Project Participants** | 60 | 45 | 60 | 40 | 60 | 60 | 60 |
| **Age range** | 20-70 | 33-61 | 36-64 | 39-60 | 39-64 | 30-66 | 33-61 |
| **Gender** | | | | | | | |
| Female | 8 (67%) | 5 (71%) | 1 (33%) | 3 (75%) | 3 (50%) | 4 (67%) | 6 (100%) |
| Male | 4 (33%) | 2 (29%) | 2 (67%) | 1 (25%) | 3 (50% | 2 (33%) | 0 |
| **Race** | | | | | | | |
| Black | 8 (67%) | 7 (100%) | 1 (33%) | 0 | 0 | 1 (17%) | 6 (100%) |
| Other | 1 (8.3%) | 0 | 0 | 1 ( 25%) | 1 (17%) | 2 (33%) | 0 |
| White | 3 (25%) | 0 | 2 (67%) | 3 (75%) | 5 (83%) | 3 (50%) | 0 |
| **Ethnicity** | | | | | | | |
| Hispanic | 2 (17%) | 0 | 1 (33%) | 2 (50%) | 2 (33%) | 2 (67%) | 0 |
| Non-Hispanic | 10 (83%) | 7 (100%) | 2 (67%) | 2 (50%) | 4 (67%) | 4 (33%) | 6 (100%) |

# Results: Facilitating Factors



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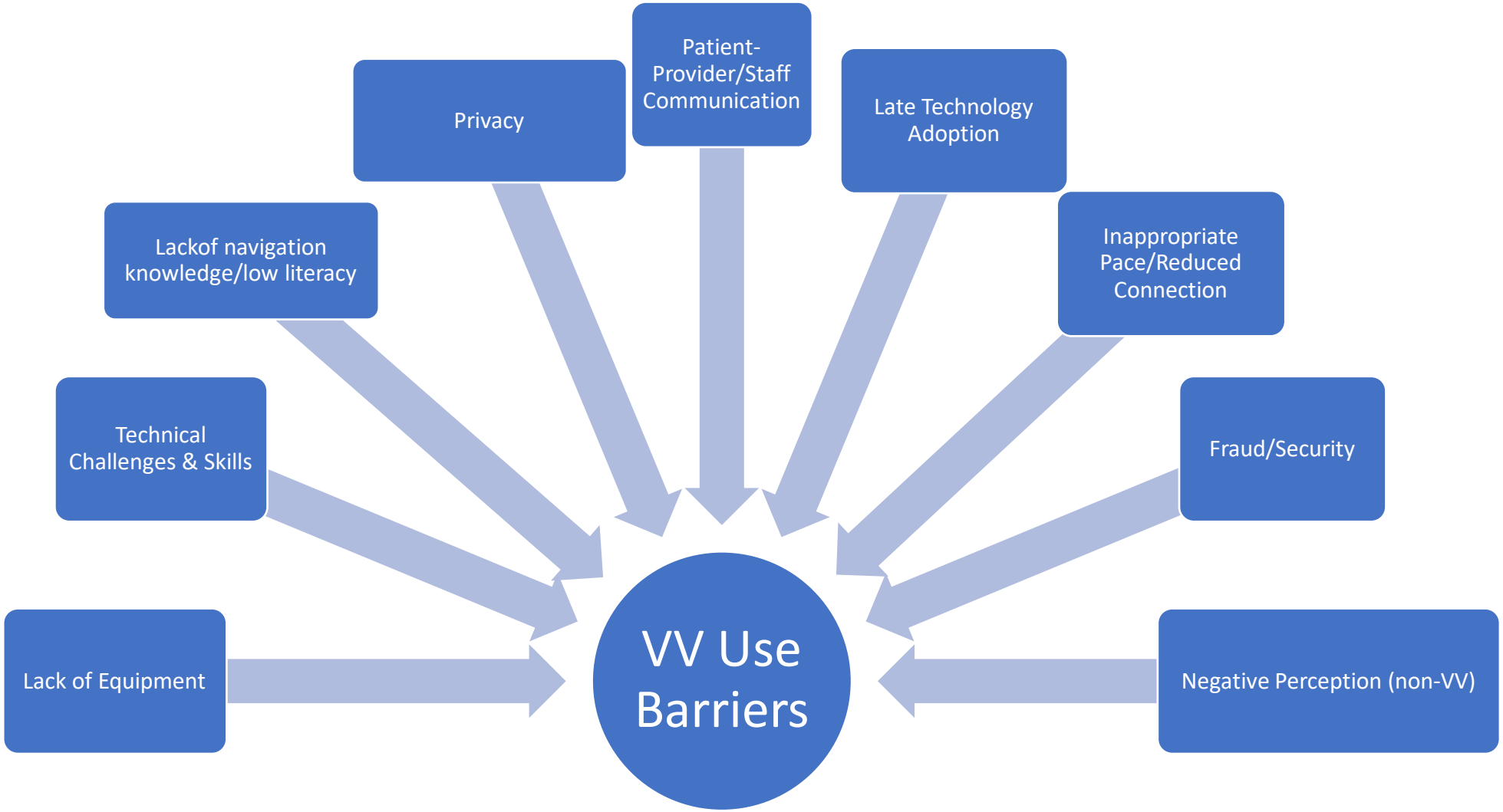
# Results: Hindering Factors



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# Provider Satisfaction

| Question/Item | Strongly Disagree n (%) | Disagree n (%) | Neutral n (%) | Agree n (%) | Strongly Agree n (%) |
|---|---|---|---|---|---|
| Image quality and audio is acceptable | 1 (2.0) | 1 ( 2.0) | 0 | 16 (32.7) | 31 (63.3) |
| Accurately access audible symptoms | 1 (2.0) | 1 (2.0) | 6 (12.0) | 20 (40.0) | 21 (42.0) |
| Ability to touch patient impairs my ability to diagnose | 1 (2.0) | 1 (2.0) | 26 (52.0) | 12 (24.0) | 5 (10.0) |
| Clinical information is sufficient for diagnosis& treatment | 1 (2.0) | 0 | 2 (3.9) | 28 (54.9) | 19 (37.2) |
| The technology distracts me during VV | 21 (41.2) | 2 (43.1) | 5 (9.8) | 2 (3.9) | 1 (2.0) |
| Technical difficulties make using VV too time consuming | 16 (31.4) | 23 (45.1) | 7 (13.7) | 2 (3.9) | 2 (3.9) |
| When errors occur, tech support is available and responds in a timely manner | 1 (2.0) | 7 (14.3) | 12 (24.5) | 10 (20.4) | 11 (22.5) |
| I am satisfied with the location of my Virtual Visit workstation within the clinic | 1 (2.0) | 1 (2.0) | 1 (2.0) | 15 (30.6) | 30 (61.2) |
| Overall, Virtual Visit is easy to access and use | 2 (4.0) | 2 (4.0) | 3 (6.0) | 15 (30.0) | 27 (54.0) |
| Using VV takes longer than same location visits | 17 (33.3) | 29 (56.9) | 5 (9.8) | 0 | 0 |
| VV improves my clinical efficiency | 0 | 1 (2.0) | 11 (21.6) | 19 (37.2) | 20 (39.2) |
| VV does not impair communication with the patient | 1 (2.0) | 2 (4.1) | 1 (2.0) | 23 (47.0) | 22 (44.9) |
| I am able to see enough details of the patient's facial expressions and body movements to communicate effectively with him/her | 2 (3.9) | 1 (2.0) | 1 (2.0) | 20 (39.2) | 27 (52.9) |
| VV impairs the doctor-patient rapport | 22 (44.0) | 23 (46.0) | 2 (4.0) | 1 (2.0) | 2 (4.0) |

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# Provider Training - Satisfaction

| Pre- & post- mean scores for physicians completing training, N=83 | Pre Mean | Post Mean | Mean Diff (CI) |
|---|---|---|---|
| 1. Comfortable conducting VV using available telemedicine equipment / technology | 3.16 | 4.27 | 1.16 (0.87, 1.45) |
| 2. Able to use clinical skills during a VV | 4.06 | 4.39 | 0.30 (0.16, 0.44) |
| 3. Concerned about technology or equipment malfunctions during a VV[a] | 2.94 | 3.08 | 0.19 (-0.05, 0.43) |
| 4. Inability to touch patient will impair ability to assess patient's condition* | 3.02 | 3.51 | 0.47 (0.26, 0.66) |
| 5. Need more training on how to conduct a VV* | 1.85 | 3.72 | 1.90 (1.58, 2.22) |
| 6. Would like more practice/experience conducting a VV before I see patients[a] | 2.04 | 3.49 | 1.33 (1.02, 1.65) |
| 7. Know what types of conditions or complaints appropriate for VV versus in person | 3.59 | 4.25 | 0.64 (0.43, 0.86) |
| 8. Communicate effectively with patient during VV | 4.05 | 4.32 | 0.26 (0.13, 0.39) |
| 9. Confident to troubleshoot common technology issues that may arise during VV | 3.04 | 3.71 | 0.70 (0.49, 0.90) |
| 10. My patients will be satisfied with VVs | 3.81 | 4.11 | 0.30 (0.15, 0.46) |
| 11. VVs will improve my patients' access to medical care | 4.20 | 4.27 | 0.08 (-0.07, 0.23) |
| 12. Anticipate seeing an increase in patients who use VVs | 3.94 | 4.12 | 0.24 (0.10, 0.37) |
| 13. VVs will improve efficiency in my clinic | 3.78 | 4.00 | 0.22 (0.05, 0.39) |
| 14. Confident that my doctor-patient rapport will be unimpaired by VVs | 3.62 | 4.03 | 0.46 (0.24, 0.67) |
| 15. Prefer to see my patients in person[a] | 2.53 | 2.67 | 0.10 (-0.09, 0.29) |
| 16. Overall, VV system is accessible and easy to use | 3.38 | 4.18 | 0.85 (0.66, 1.05) |

[a]Inversely coded where strongly disagree = 5; strongly agree = 1; CI=Confidence Interval; significant where CI does not include 0

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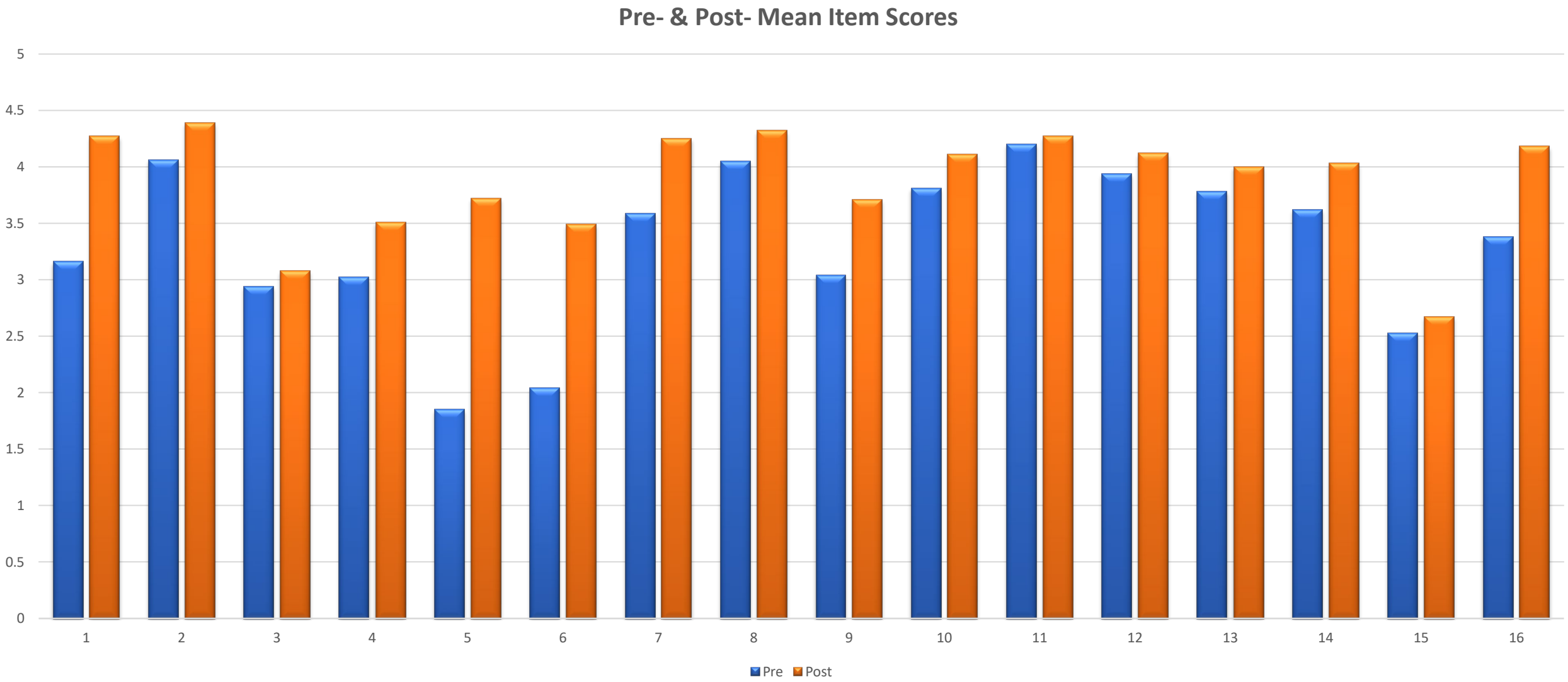
# Provider Training - Satisfaction



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# Recommendations & Opportunities for Improvement

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# Recommendations for Improvement: VV

**Create a MyChart:**

- **Patient checklist for patients to list questions or discussion points before VV**
- **Provider checklist to discuss and review specific patient medical information during VV**
- **Feature that allows for viewing two screens simultaneously, the health care provider, and the lab results**
- **Virtual chat option to assist with navigating MyChart particularly during the first time logging in to a VV**
- **Helpline for VV patients**

**Use telemedicine as a triage tool to determine if a patient should go to the emergency room, manage a medical issue at home, or schedule an in-person visit with a health care provider**

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# Opportunities for Improvement: VV

## Education & Training

-Create 2 - 3 minutes VV training videos so that patients can view several times i.e. video demonstrations

-Offer VV training classes to learn how to use MyChart, VV technology

-Create user-friendly information (step by step): 1) how to sign up for MyChart; 2) how to easily navigate MyChart; 3) Benefits of MyChart i.e. seeing lab results, scheduling appointments

## Outreach and Messaging

- VVs are safe

-VVs are private

-VVs are user friendly

-VVs eliminate childcare and transportation barriers

-VVs may be conducted on a computer, tablet, or smart phone

-VVs allow for direct communication and access to providers

-VVs allow for access to network providers

## Coordination

-Create a process that if there is a cancelled VV, the patient may reschedule another (i.e., VV or in-person) visit quickly rather than rejoining the wait list

-Inform patients about types of visits that are ideal for VVs

i.e. lab results follow-up

# Opportunities for Improvement: In-Person Visits

## Privacy

-Create a more confidential, private environment during in-person visits

-Label sign in sheets that eliminates/reduces potential for privacy breaches when check-in

-Requiring patients to sign-in and write their reason for visit or current health condition to avoid others hearing in the waiting area

## Time

-Some patients requested a shorter wait-time for the doctor

-A patient mentioned wanting more time to speak with the provider

## Patient Engagement

-Patients described characteristics of effective patient-provider communication during in-patient visits

- Good Listener

-Thinks of ways to make life easier

-Checks up and monitors health

-Individualized, solutions tailored to the patient

-Gives patient options

# Immediate & Long Term Goals

| | |
|---|---|
| Share findings with key stakeholders | Patients |
| | CAB & community at large |
| | UFHealth leadership, clinical & ancillary support staff |
| Submit final reports to key stakeholders | Provide recommendations to UFHealth |
| | Share lessons learned with academic/medical/scientific communities |

# Immediate Next Steps: Dissemination

## Analyzing quantitative and qualitative data

- Viral load analysis; provider qualitative findings

## Disseminating findings with all key stakeholders

- Patients, UFHealth leadership, academic/clinical community

## Sharing improvement opportunities with TM and UFHealth leadership

# Acknowledgements


## Collaborators & Participants

- CDC
- Community Advisory Board
- Focus group & survey participants
  - Patients
  - Community based organizations
  - Providers
  - Medical support staff
- HealthHIV

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- Reetu Grewal
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- Jessica Peters
- Mobeen Rathore
- Kendra Williams
- CARES providers & staff
- Clinical Data Quality Reporting
- Epic Ambulatory Reporting