An Innovative Rhode Island Quality Approach Using an mHealth Platform Called TAVIE Red

Session # 16004
Session date and time: Thursday, August 13 10:00 a.m.-10:50 a.m.

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Presenters

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Learning Objectives

1. Address what TAVIE is, the TAVIE Evolution and aspects of the platform in RI
2. Discuss quality goals, QM process, and QI in RI and how they work
3. Speak to how we integrated quality into the TAVIE components of assessments and how the real time data yield facilitates quality
4. Outline mechanics of TAVIE assessments – data in, data management and data out
5. Address why TAVIE Red is vital to sustaining quality performance measures? Here we’ll reveal some pre and post data that speak to quality improvement.
More on Today’s Session

- Will essentially expose you to how we work in RI in terms of the HRSA HAB Quality Management program, and how we strive for, achieve and maintain excellent performance measures.
- Introduce you to an innovative digital health project called TAVIE Red and how that dovetails with patient and provider quality.
Learning Objective # 1
Address what TAVIE is, the TAVIE Evolution and quality aspects of the platform in RI
HRSA HAB Clinical Quality Management

- Clinical Quality Management is the coordination of activities aimed at improving patient care, health outcomes, and patient satisfaction.

- Under the Ryan White HIV/AIDS Treatment Modernization Act of 2006 (Public Law 109-415), all Ryan White HIV/AIDS Program recipients are required to establish clinical quality management programs to:

  - Assess the extent to which HIV health services are consistent with the most recent Public Health Service guidelines for the treatment of HIV disease and related opportunistic infections.

  - Develop strategies for ensuring that such services are consistent with the guidelines for improvement in the access to and quality of HIV services.

  - Clinical quality management activities should be continuous and fit within and support the framework of grant administration functions. Components of a clinical quality management program include: infrastructure, performance measurement, and quality improvement.
What is Quality Improvement?

• “Quality improvement entails the development and implementation of activities to make changes to the program in response to the performance data results. To do this, recipients are required to implement quality improvement activities aimed at improving patient care, health outcomes, and patient satisfaction.”*

• * From PCN 15-02 (as revised 11/30/2018), p. 4
TAVIE Red was a child of Reform and the Triple Aim

1. Health outcomes
2. Patient experience and engagement
3. Efficient spending

RI Medicaid and the Ryan White program adopted these measures proactively, pre PPACA, and they continue to be in place today. Medicaid benefits from Ryan White Part B performance measures, and Ryan White Part B benefits from the Medicaid efficiency measures.
Understanding the nuances necessary to implement the Triple Aim and how to directly benefit our patients/client population via TAVIE was paramount.

Soon you’ll see a slide that addresses the evolution of the digital technology and how adaptable 360MedLink was in getting us from there to here.

Keep in mind that vulnerable people living with HIV do not ordinarily receive cutting edge digital technology (including Smartphones) to advance patient experience, to create better health outcomes, to increase their well being, or to maximize behavior change.
Scientific Background
Randomized clinical trials demonstrated positive results

Findings:
* **Raises adherence. As effective as in-person coaching.**

Video-based coach appealing, friendly, and makes technology approachable. People felt like they had “someone” to rely on.

Selected as “Sole Source” vendor by HHS Rhode Island.
Platform Evolution

**Adapted for Ryan White Part B**
- The goal of the platform is to help case managers and clients:
- Improve health and wellbeing
- Improve social determinants of health

**CLINICALLY VALIDATED VIRTUAL NURSE**
- Developed and validated by the teaching hospital of Montreal, Chair on New Nursing Practices

**TAVIE HIV**
- 2018

**TAVIE RED**
- 2019
- Second generation of app for increased client value
- Increased engagement, support and hopefully, delight

**New Upgrade of App for Increased Engagement and Client Value**
- Boost of engagement, New Modules, New Quests, New experience!
- Physical Activity, Insomnia, Mental Health, COVID-19

**TAVIER RED**
- 2020
- Gamification, SoDH integration, Behavioural Economics at work
The Challenge

In a recent state study RI identified barriers to care with physicians, nurses and case managers - they said:

1) “We have little time to spend with patients”
2) "We can’t capture every patient’s story or their set of beliefs about health”
3) “Motivating patients to take action about their health is difficult, complex and time consuming”
4) “Proper health assessments are available but they are not all connected to each other and sometimes are unusable”
5) “We understand SDoH are critical to a patient's success, but where do we start with these?”
TAVIE is the clinically validated digital platform that meets patients where they are...

Helps the Patient Day-to-Day to Make New Behaviours Routine
TAVIE Platform: A Modular Design

1. Virtual Coaching
   - Built in Assessments
   - Treatment adherence
   - Patient education
   - Side-effect management

2. Trackers and Feedback
   - Symptom assistance
   - Treatment reminders
   - Physical activity
   - Viral load, weight, BP, +

3. Whole Health & Holistic
   - Psycho-social support
   - Symptom management
   - Service acquisition (food insecurity, housing, engagement with healthcare)

4. Gamification
   - Interactive Quests
   - Dynamic Feed
   - Upgrading reminders and notifications
   - Alerts for care managers
Building on the RI Experience
A Portfolio of Treatment Companions
Current TAVIE Therapy areas
What is TAVIE Red 2020?

- An advanced digital solution to End The Epidemic
- A client/patient companion that is interactive and framed around gamification theory and behavioral economics
- Hits SDoH head on
- Integrates critical health and medical related self assessments, tracking components (e.g., quests inputs and outputs, etc.), engagement, and built in evaluation methods to describe needs, analyze data and enhance patient/client outreach via case management and clinical providers
- A flexible, generalizable and easily transferable platform for use anywhere by anyone
- Quality is integral to what TAVIE does and stands for...
Goal: An estimated 599 Rhode Island patient population with established HIV infection (covered by Ryan White Part B) are screened by the OHHS-RI.

- Eligible patients receive an android phone pre-loaded with the TAVIE-RED application.
- Case managers receive access to the professional platform on a desktop and in some cases, tablet devices to use the application in the field for communication, remote-monitoring and early intervention if needed.
- Three generations of the platform were deployed over a two-year period. Participants completed a survey at baseline and follow-up on paper and digitally through the application. Thus far 250 people LWHIV have participated in this program along with their case managers, and recruitment is still open and ongoing.
- The multidisciplinary team provide ongoing care and support between clinical visits.
- A clinically-validated virtual nursing intervention based on user-centered design and behavior change theory. The application targets constructs known to increase self-efficacy to perform self-management behaviors:

  - Enactive Mastery (Performance outcomes)
  - Vicarious Experience (ex. Self-modeling)
  - Verbal Persuasion (ex. Verbal encouragement)
  - Physiological Arousal (ex. Emotional state)

Development of Self-Efficacy
Sources of Self-Efficacy
Behavior & Performance
Learning Objective # 2
Discuss quality goals, QM process, and QI in RI and how they work
RI Quality Goals

- Improving the health and overall well being of PLW/A
- Assuring PLW/A receive the best care possible
- Continuous improvement of care delivery processes to achieve service excellence and optimal clinical outcomes
- Improving the knowledge, skill, and competency of the workforce
- Foster collaboration, cooperation, teamwork among sub-grantees to assure a seamless, continuous system of care in the state
- Addressing the **Triple Aim**
RI Ryan White Part B Statewide QM

- Statewide RW Part B with collaboration of other RW parts
- Leadership provided by EOHHS Medicaid team
- Participation of all funded agencies
- QI assistance from QM consultant @ RI College
How QM Works in RI - Structure

<table>
<thead>
<tr>
<th>QM Plan (Statewide, agency)</th>
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<tr>
<td>QM committee meets monthly with all sub-grantees represented</td>
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<td><strong>Agendas include:</strong> review of PM’s, identification of opportunities for improvement, updates on QI initiatives, identification of training needs, <strong>state wide</strong> improvement initiatives</td>
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<td>Additional subgroups, teams as needed</td>
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<tr>
<td>Quarterly meetings of case managers</td>
</tr>
<tr>
<td>Monthly meetings between medical and non-medical providers</td>
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<tr>
<td>CAB statewide and agency specific</td>
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</tbody>
</table>
How QM Works in RI - Agency Roles

- Attend and Participate in QM meetings
- Submit PM’s quarterly basis
- Lead QI projects in their agencies and share progress
- Participate in statewide QM projects, initiatives
- Assure staff receive ongoing training in QI
- Submit agency QM plans that are individualized to their RW service categories and agency
- Consumer Involvement
RI QMC Continued

- **Membership** – Predominately Case Management agencies (both clinical and non-clinical). For this first time we now have agencies on the QMC that are doing EIS, Housing, Intensive Case Management, Behavioral Health integration, HIV workforce development, public institutions of higher education, mobile clinic outreach, etc.

- *Focus on participating in discussions about selecting HRSA Part B Performance Measures,* developing standards of practice in the field, sharing stories of clients, barriers to care/treatment, system issues, challenges to case managers and other providers, opportunities, discussing trauma based and crisis management, addressing system and client threats, creating innovative models (e.g., LifeSaver – a list serve for case managers who can post available resources like housing slots, residential care, food banks, etc. and to request needs.), etc.
RI Quality Management Programmatic Features

- Leadership Training and Development: CEOs, CMs, State staff, consumers
- TA, and Capacity Building for agencies
- QM Monitoring Standards & Reporting (6 month and quarterly reports)
- HRSA Performance Measures
- PM Reporting and Analysis
- Provider review of QM Report Findings
- QM Planning
- QM Training
- Facilitation of QI Teams
- Measurement of Consumer Needs/Expectations
QMC And TAVIE

QMC receives regular TAVIE updates:

- Monthly meeting
- Since many case management agencies and case management supervisors are on QMC they are actively involved in TAVIE adjustments and agency work with TAVIE

QMC assists with QM performance measure build and TAVIE helps by integrating with CAREWare:

- QMC is impressed with levels in increased health outcomes measures related to pre and post TAVIE data
Learning Objective # 3
Speak to how we integrated quality into the TAVIE components of assessments and how the real time data yield facilitates quality
The TAVIE Ecosystem is Integrative to Healthcare Quality

Provider Integration Facilitates Care Coordination

CAREGIVER APP
Involvement in their patient care pathway

PAYOR DATA & ANALYTICS ENGINE

PATIENT COMPANION
Personalized coaching, and self-efficacy

HEALTHCARE PROVIDER CONSOLE
Supporting remote monitoring, communications, and care coordination

EMRs

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EMRs
Behavioral economics provides a framework to understand when and how people make errors.

**Behavioral Economic Principles**

**Social proof (the bandwagon effect)** – Tendency of people to assume the actions of others reflect the correct behavior in a given situation. We look for cues in how others behave and copy their behavior in unknown situations.

**Status quo or knowledge bias** – Tendency of people to choose the option they know best rather than choosing the best option. Sometimes called the IBM effect in business (people would choose the IBM PC because IBM was a well known commodity – although not always the best choice).

**Zeigarnik effect** – Uncompleted tasks are more prevalent in your mind than completed ones. Uncompleted tasks occupy a significantly larger portion of our cognitive attention than do completed tasks (we ruminate about them more).
Gamification Phenomena: Process and Flow of Incremental Behavior Change

Quality Enhancement: Behavioral Economics & Gamification Phenomena in Motion

Process and Flow of Incremental Behavior Change with TAVIE Red

- **Quest Selected or Prescribed**
  - Behavior Change is Often Immediate when Quest begins
  - Real Time Data Visible Via Console, Analytic Capability, Report Builder, Performance Measure Feature (e.g., health outcomes, usage, etc.)

- **Questing Builds Rituals** (Across a Variety of Self Assessments, Medication Adherence, Lifestyle Change, chronic Diseases, etc.)

- **Completion of Quest**
  - Leads to **Recursive Rewards** (Tokens, Points, Gift Cards, etc.)
  - Points are assigned, Leader Board Avatar (anonymous) Recognition
TAVIE Red & Aspects of Continuous Quality Improvement

Focus on Consumer Needs/System Gaps

RI QMC: Assess Jointly, Plan Jointly, Act Jointly

Implement, Evaluate, QI says Let Data Drive Programming (Service Categories)
TAVIE and Q Performance Measures

- Viral Load Suppression
- Medical Visit Frequency
- Gap in Medical Visits
- Complete Assessment
- Complete Reassessment
- Care Plan
- Face-to-Face Contact
- Monthly Case Manager Contact
- Housing Status
Learning Objective # 4
Outline mechanics of TAVIE assessments – data in, data management and data out
User-Centered Design

- In- Participants enter data via Quests
- Management - Data becomes real time to provider (case managers) and RI EOHHS
- Out- Reports, care planning

Rhode Island TAVIE Red is based on an iterative, user-centered design. A cohort of over 300 people living with HIV are enrolled.
1. **Quick study** re: Why viral suppression wasn’t happening in some - Domestic violence does influence treatment adherence rate and viral suppression rates.

2. **Quick study** re: Unstable housing- it influences retention in care.

3. **Quick study** re: Depression rates. Found a significant number of users had moderate to severe depression. Under diagnosed rates of clinical depression in vulnerable populations?

4. **Quick study** re: Lack of Internet Connectivity impacts quality/intensity of care
Medication Adherence
Self-Reported Barriers

Baseline

Medication Adherence (87%)

Reported Barriers to Adherence

Timeline: Sept 2018 - Sept 2019
Total Participants = 215
Results: Risk Factors & Comorbidities

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## Results: Risk Factors and Comorbidities

### Risk Factors and Comorbidities

Timeline: Sept 2018 - Sept 2019
Total Participants = 215

<table>
<thead>
<tr>
<th>Health Issues</th>
<th>Number of Patients</th>
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<tbody>
<tr>
<td>Mental Health</td>
<td>89</td>
</tr>
<tr>
<td>Hypertension</td>
<td>46</td>
</tr>
<tr>
<td>Hepatitis C</td>
<td>29</td>
</tr>
<tr>
<td>Diabetes</td>
<td>22</td>
</tr>
<tr>
<td>Cardiovascular Diseases</td>
<td>19</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>17</td>
</tr>
<tr>
<td>Cancer</td>
<td>10</td>
</tr>
<tr>
<td>Others</td>
<td>35</td>
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Number of patients reporting having comorbidities
Results: Quality Measures
Increased Satisfaction

- 88% Would Recommend
- 80% Agree Helps Manage Medication
- 82% Agree Helps Manage Condition

High rate of adoption, satisfaction, and perception of value are high. Despite having little experience with technology.
Results: Quality Measures
Increased Medication Adherence

At start
TAVIE-HIV
87%

After 3 months
TAVIE RED
88.3%

After 9 months
TAVIE RED
99.2%

Medication Adherence follow-up at 3 months & 9 months with TAVIE Red – Gamification works!

+12% Adherence!
Pre and Post Gamification: Outcomes Improve with Gamification

TAVIE HIV represents the initial app, without gamification. TAVIE Red is revised app with gamification. Initial Cohort (N=47)

Viral Load Suppression

- **Not Suppressed**: 63.8%
- **Suppressed**: 74.5%

Significant Change
Address why TAVIE Red is vital to sustaining quality performance measures? Here we’ll reveal pre and post data that speak to quality improvement.
Supporting Healthy Choices and Behavior...

- Personalized coaching
- Feed of upcoming events and tasks
- Patient dashboard
- Health quests to support behavior
- Serious gaming, rewards, and feedback
Treatment and Symptoms Management

- Symptom Tracker/Assistant
- Medication Tracker
- Treatment Reminders
- CD4 and Viral Load Charting Tool
Clients can locate services recommended by Case Managers:

- Food
- Medical services
- Housing
- Counseling
- Other
Results: Usage and Engagement

Usage and Engagement - **Quests**

Timeline: Sept 2018 - Sept 2019
Total Participants = 215

Number of Users Completing a Quest per Category

- Meeting Physical Activity
- Red Quests
- Your Health
- Your Sleep
- Your Well-Being

As of July 2020
Healthcare Provider Console

Bi-directional information exchange

Via a Console/Dashboard the Case Managers can:

- Send announcements
- Schedule appointments
- Review progress to encourage and support
- See assessment progress
Built-in Real-Time Data and Analytics

1. Data sophistication
2. Actionable real-time data and reporting
3. Interlinked reporting
Expanding Mental Health Support
COVID19 Support and Beyond...

Emergency Preparedness
Conclusion & Thank You!!!

**Opportunity**
- TAVIE meets quality head on and can be easily implemented into existing quality programming for Ryan White.
  - Additional modules for many chronic conditions, wellness, BH and COVID19 and emergency preparedness

**Solution**
- The TAVIE platform: scientifically validated, exceptional user satisfaction, high performance measures that are clinically adaptable, etc.
  - Assisting highly vulnerable people with difficult behavior change challenges

**Options**
- Off the shelf (Use of existing TAVIE resources)
- Hybrid approach
- Special adaptation or customization

Based upon the Rhode Island HRSA Supplemental grant experience and best practice observations