HITCHHIKER'S GUIDE

INNOVATIVE SYSTEMS OF CARE
Mobile health and Innovation Platform
THE TAKEAWAY

DEPLOYING TECHNOLOGY FOR THE CONTINUUM OF CARE

MODERNIZING A HEALTH CARE SYSTEM

GAMIFICATION TO BUILD RITUALS AND PERFORMANCE MEASURES

CONNECTING WITH A COMMUNITY USING TECHNOLOGY
CONTRACT
Inception & Rollout

→ Initial Cost
$619,909.00

→ Methods

→ Group Enrollments
In Person/ Face to Face
Enrollments (Phanida).

→ Established early adoption by our
Consumer Advisory Board for
bidirectional input and
feedback.
RI Government Health Reform Trending in the Field:

**The Triple Aim**

1. Improve health outcomes
2. Improve patient experience and engagement
3. Smarter, more efficient spending

*RI Medicaid and the Ryan White program adopted these measures assertively pre PPACA, and they continue to exist today. The experience allowed Medicaid to benefit from Ryan White Part B performance measures, and for Ryan White Part B to benefit from the Medicaid efficiency measures.*
Efficiency and Effectiveness of Health Reform Allowed for Innovative Digital Health Opportunities

• **What we wanted and needed:** RI state government search around PPACA implementation to adopt an innovative method to effectively communicate, monitor/enhance health outcomes, engage in telehealth opportunities and evaluate performance measures with people living with HIV enrolled in the Ryan White program.

• **Process:** Conducted a 12 month review of existing products and smart phone applications. We were looking for more than an application – specifically we wanted a hybrid model of an innovative application coupled with a programmatic bent that directly interfaced with our consumers.

• **Selection:** After research stage, RI procurement allowed for a Sole Source with **TAVIERX**.
SETTING UP A DATA HIGHWAY

CREATED A DATABASE SIMILAR TO A PUBLIC LIBRARY

CONTEXT: THE TRIPLE AIM
- Improve outcomes
- Heighten experience
- Reduce costs

CASE STUDY
- Understanding our population
- Implementing virtual coach companion platform
DATA HIGHWAY

→ **System**
  Developed a system to capture enrollment form data at different stages.

→ **No Names**
  De-Identified data for 360 Medlink to perform analysis by control groups.

→ **Routes**
  Designed Data flow (i.e. where does the data go once entered and to whom).

→ **Two way traffic**
  Created bidirectional communication with CAREWare.
Approach:
Hybrid platform designed to meet dynamic needs of populations

Clinically Validated Virtual Nurse App for Patients. Users receive personalized coaching sessions, treatment reminders and tracking tools.

Provider Console to Monitor and Intervene. An interface for case managers and providers to stay in touch and assist patients.

Stakeholder Analytics. Customizable dashboard to track performance measures, view clinical outcomes and track engagement to inform decision-making.
BUILDING A MOBILE HEALTH VEHICLE

Using a smartphone as a platform,

We have used a smartphone as a vehicle to deliver care to our community.
A VEHICLE FOR CARE

We built a vehicle and setup the following components.

➔ ADAP
   Highlight what’s new, unusual, or surprising.

➔ BHDDH
   Mental Health Assessments and analysis of comorbidities.

➔ PEER NAVIGATION
   Providing enrollents to newly diagnosed clients.
ADAP

Formulary
Medication Adherence

Rhode Island ADAP Specific

CD4/Viral Load
Empowers client to be aware of changes in health statuses.
Newly diagnosed clients have a tool that helps prevent falling out of care

Symptoms Diary
Self advocating tool for clients.
Lessons Learned.....

1. On the ground implementation challenges and barriers
2. Procurement in state government is a critical factor
3. Vulnerable populations deserve and thrive with advanced technology
4. Risks and Benefits: Phones, data, evaluation, manageable app development

Future Work:
❑ Next version includes scheduled, promoted in-app assessments to facilitate evaluation
❑ Evaluation studies to follow
Goals & Experience with TAVIE-HIV

- Targeting 600 clients using the platform
- Currently 250 users, very vulnerable subset of RW clients
- Clients receive phones preloaded with the application.
- Case managers can track progress and follow-up with clients

Through in-app assessments, clients report high user satisfaction:
- They would recommend it to others (4.4/5)
- Learn from it (4.4/5)
- The virtual coach puts them at ease (4.2/5)

Through input sessions, clients and case-managers described additional needs

From TAVIE-HIV to TAVIE-RED

TAVIE-RED addresses the psycho-social and service needs of clients.
CONTINUED...How TAVIE Can Assist In Identifying and in Making a Difference in Viral Load Suppression in the Most Vulnerable Clients

**TAVIE Responders**
- 77% report viral suppression
- Data collected here was via app and more recent that data to the right
- Opportunity here is to work with clients using the app and to increase viral load sub population in this circumstance
- TAVIE has proven to be a sentinel to isolate vulnerable, super users and/or clients who are not succeeding in their health outcomes

**Ryan White QM Responders**
- 91% report viral suppression
- Data collected here was via validated laboratory reporting (case managers)
How TAVIE Can Assist in Identifying and in Making a Difference in Viral Load Suppression in the Most Vulnerable Clients

Viral Load Suppression As Reported By TAVIE Users

Viral Load

77%

6% 6% 6% 6% 6% 2%

under 50 51-200 201-500 501-10,000 10,001-100,001 +

Viral Load Suppression As Reported By Quality Management Performance Measures

Figure 1

Non-Medical Rhode Island Ryan White Providers HIV Viral Load Suppression*  

<table>
<thead>
<tr>
<th>Provider</th>
<th>n=2017</th>
<th>n=2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>91.52</td>
<td>87.47</td>
</tr>
<tr>
<td>APRI</td>
<td>92.5</td>
<td>50.5</td>
</tr>
<tr>
<td>AGAPE</td>
<td>89.52</td>
<td>83.33</td>
</tr>
<tr>
<td>ACOS</td>
<td>88.58</td>
<td>92.53</td>
</tr>
</tbody>
</table>

* The number of clients with a HIV viral load less than 200 copies/mL at the last HIV viral load test within the last 12 months.

Numerator is defined as, the number of clients in the denominator with a HIV viral load less than 200 copies/mL at last HIV viral load test within the last 12 months.

Denominator is defined as, all Ryan White Part B non-medical case management clients, regardless of age, with a diagnosis of HIV.
Specifically: There is converging evidence that our population is vulnerable, in need, and often disengaged

Significant Data

- **Insurance Status Troubling:** Many People Living with HIV were uninsured or underinsured

- **Socially Isolated.** Many are disabled, disconnected, single, divorced, or widowed (80%)

- **Work History:** Most were not Working. Many unemployed (63%).

- Only a fifth of respondents have a college degree (22%).

- **Unstable Housing:** Many in temporary housing or homeless (21%).

- **Tendency to disengage with healthcare systems.**

*Based on baseline assessment

Observational Assessment

Many people living with HIV in RI with lower income (and other social determinants) did not have smartphones or computers.
Still:
Psycho-social and Technological Needs are Great

High incidence of mental health issues. 35% of users report having mental health problems and 33% are moderately or severely depressed based on self-administered screener (PHQ-9).

Difficulty managing symptoms. 50% users report side-effects (i.e. pain, fatigue, trouble sleeping) and they lack confidence in managing them. Low level of wellbeing.

Need for help and social support. Users lack confidence in getting the help and support they need.

Clients are not well connected. Few have smart phones. Technological literacy is low.

Source: Baseline assessment
Input-Based Development Process:

1. **VALIDATED PLATFORM**
   Developed and validated by the teaching hospital of Montreal, Chair on New Nursing Practices

2. **INITIAL ADAPTATION & VERSION**
   Adapted the content and trackers for an American audience of Ryan White Part B clients

3. **MATURE APP RELEASE**
   Developed and implemented functionality to meet client need. Increased engagement, support and delight
Rationale for TAVIE-RED: Select and Develop appropriate modules for the target population

**Virtual Nurse Coaching Sessions**
- Treatment adherence
- Patient education
- Side-effect management
- Stress reduction
- Physical activity

**Health Trackers and Feedback**
- Symptom assistance
- Treatment reminders
- Physical activity
- CD4/Viral load, temp., BP, weight

**Performance Measure Support**
- Improve Whole Health
  - Psycho-social support
  - Resource map
  - Communication with case managers

**Gamification and Engagement**
- Interactive Quests
- Dynamic Feed
- Upgrading reminders and notifications
- Alerts for care managers
A “feed” page shows interactive content and announcements from case managers.

Virtual nurse coach, a resource map and calendar with reminders help users manage care day-to-day.

Users practice and solidify skills through health-related “quests” and gain rewards as they progress.
A STATE IN SYNC
A GLIMPSE FORWARD!

- TeleHealth: Billable now for RI Medicaid

Client Desire to decentralize their med record

Data interoperability plus

The app is programmatically synched to service categories via data streams
PRO Console: Customized portal for case managers