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SE AETC/TN AETC
24th Annual HIV Symposium
November 5, 2021



Enhancing Engagement with Care: Design, Development, and Implementation of a mHealth platform for PLWH

Disclosures

- Investigator-initiated grant from Gilead related to improving HCV treatment in rural areas through telehealth.
- We provide consulting services to Warm Health Technology, Inc related to implementation of PLCares.

HIV Care Challenges Rural VA





HIV Care Challenges

- Stigma
- Transportation
- Poverty
- Isolation
- Alcohol/drug use
- Mental health challenges
- Housing
- Structural

mHealth can facilitate interventions addressing one or more challenges to living well with HIV when and where clients want and need it



Edit Text Messages

Schedule 1

Click to select or unselect the days messages are sent:

Mon	Tues	Wed	Thurs	Fri	Sat	Sun
✓	✓	✓	✓	✓	✓	✓

Enter time and text message (160 characters or fewer):

11 : 00 AM

09 : 00 PM

: AM

[Add another message](#)

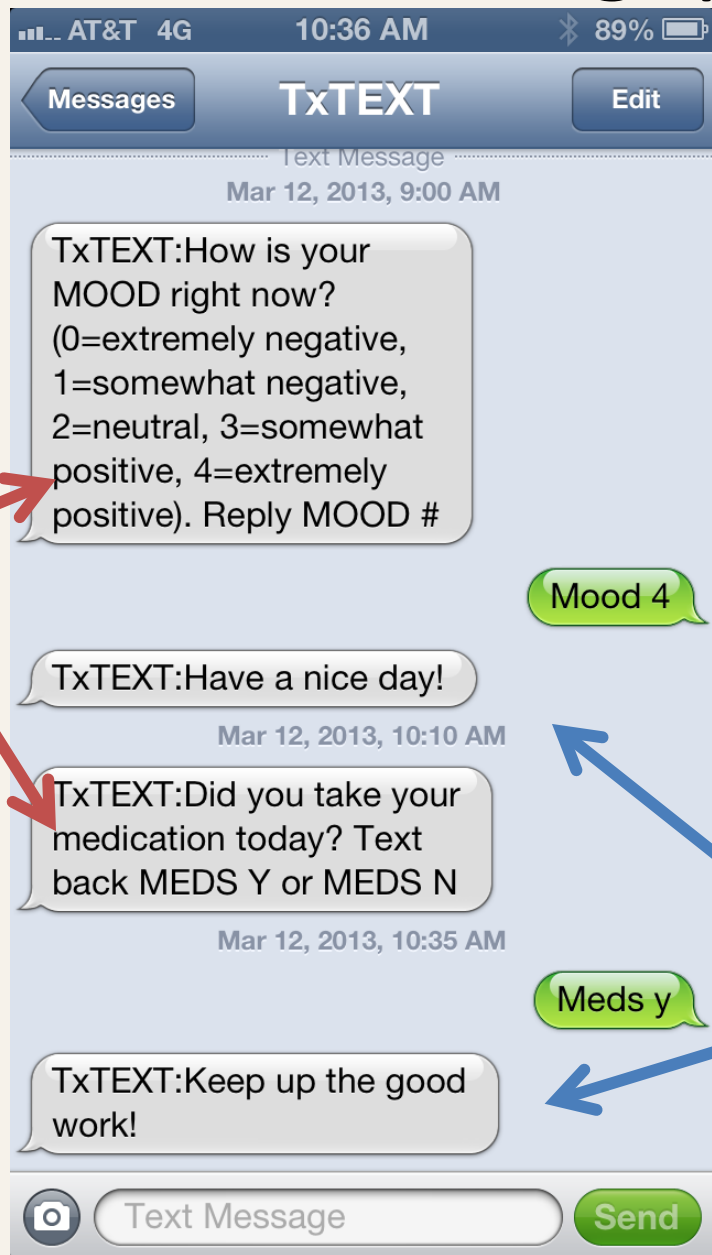
[Clear Schedule](#)

STeM Participant

- “Yeah, it did everything leading up to my decision to get back involved in my life. Take my meds on time, stop drinking, stop using drugs, be more accountable. It did everything because I’m like, ‘that #\$%^%\$# gonna blow up (ring)’ ‘cause I know it’s getting ready to, you know?”



TxText: Self-monitoring queries



Step 1: System sends automatic EMA queries for mood twice/day and medications at time of dosing

Step 2: Patient responds with keyword and answer

Step 3: Patient-designed responses automatically sent by system

From: Mobile Telephone Text Messaging for Medication Adherence in Chronic Disease: A Meta-analysis

JAMA Intern Med. Published online February 01, 2016. doi:10.1001/jamainternmed.2015.7667

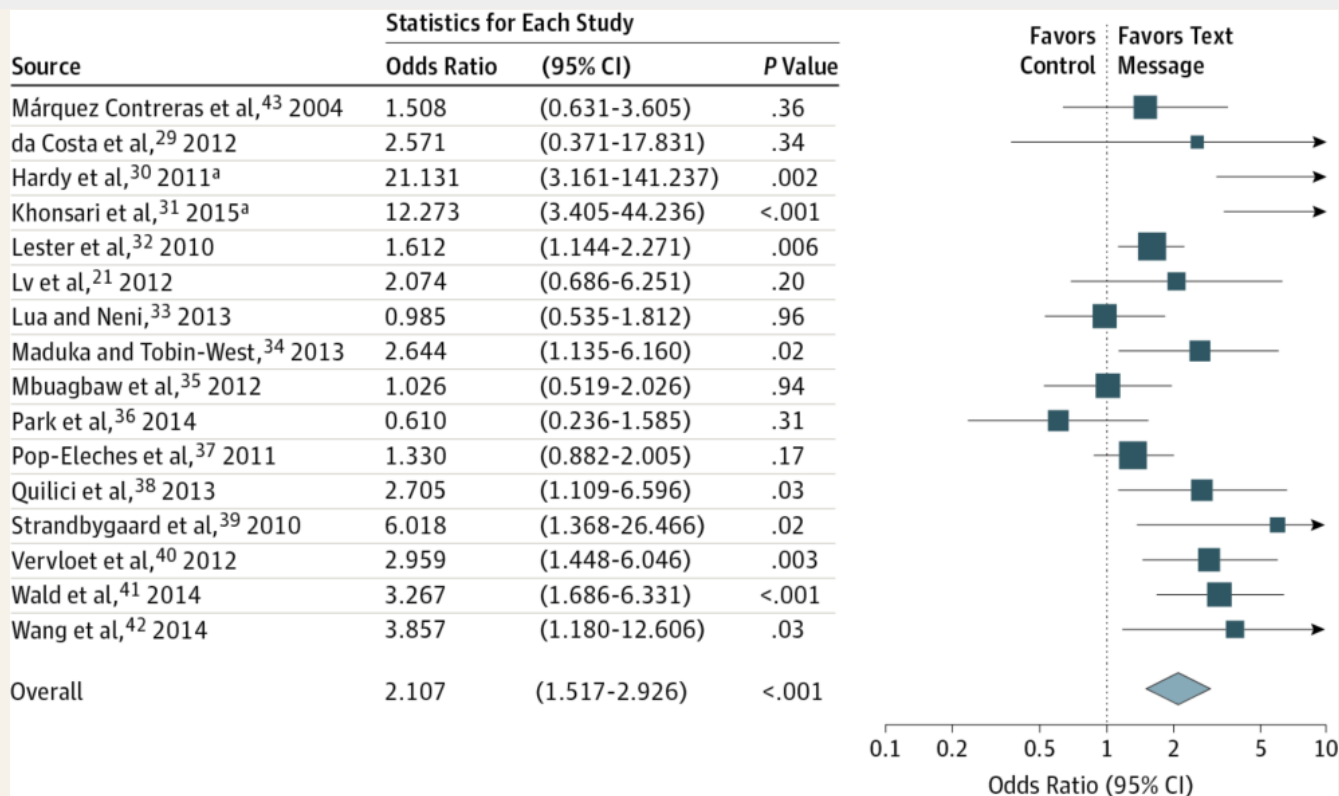
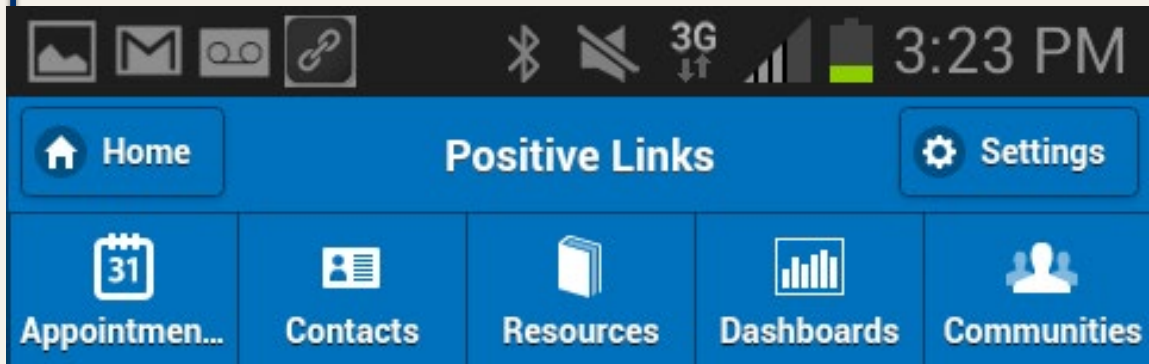


Figure Legend:

Meta-analysis of the Effect of a Mobile Telephone Text Message Intervention on Medication Adherence^aThe text message intervention significantly improved adherence (odds ratio, 2.11; 95% CI, 1.52-2.93; P < .001). The effect remained significant after excluding 2 studies with extreme outcomes (Hardy et al and Kohnsari et al) (odds ratio, 1.78; 95% CI, 1.35-2.35; P < .001).

App vs Text Interventions



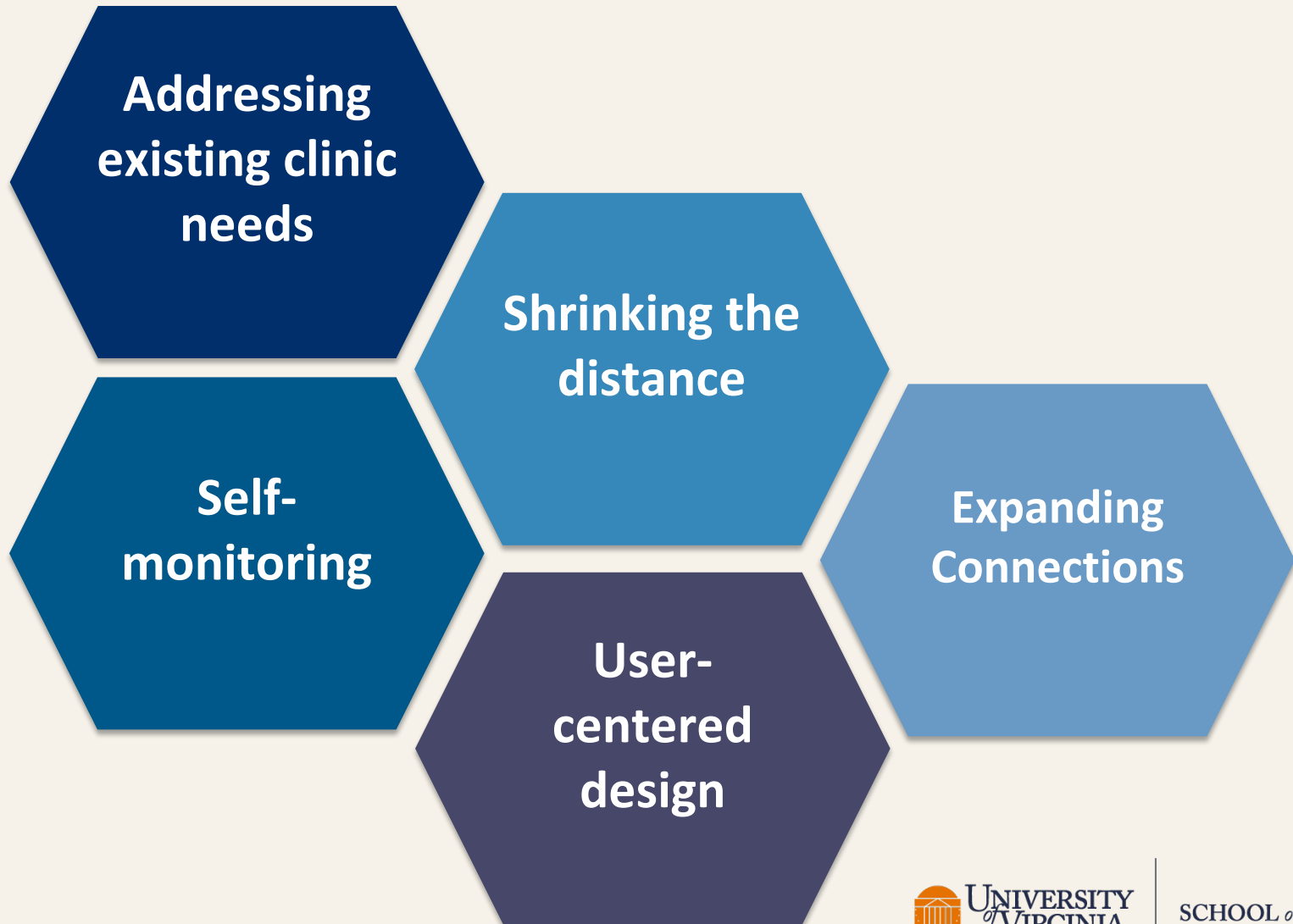
Text

- Better studied
- Phones are cheaper
- Harder to crack phone screens when dropped

App

- Consumer demand
- Rich media views, videos and community functions
- More secure
- Can send more messages without added cost

Platform Development Strategy



BASIC PL CARES CONFIGURATION

USERS AND ROLES



SIGN IN / VIEWS

MOBILE APP



MEMBER

MOBILE APP



PROVIDER

ONLINE PORTAL



PROVIDER

MOBILE APP



ADMINISTRATOR

ONLINE PORTAL



ADMINISTRATOR

Home

PL Cares home screen. See daily self-monitoring Check-Ins for meds adherence, mood, and stress. See quizzes and get feedback.

Community

Build social support by engaging with other Members anonymously through PL Cares Community.

Contacts

Access a personalized list of site care team contacts.

Labs

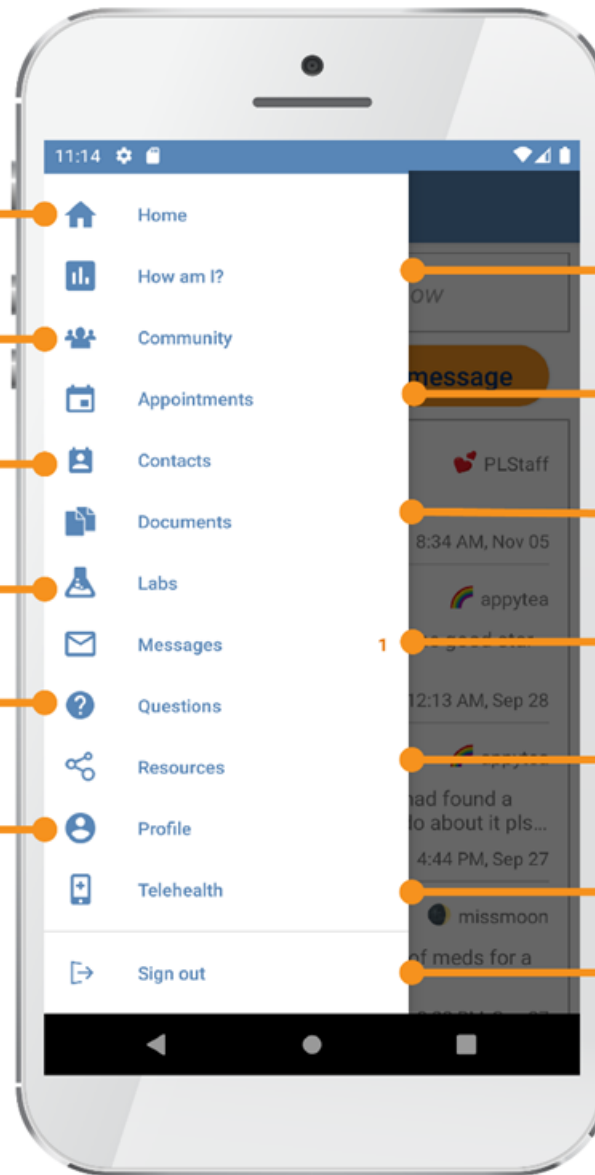
View CD4 count and viral load lab results.

Questions

Find answers to common questions of people living with HIV.

Profile

Change the Avatar. Set sign in biometrics. Change the time of meds Check-In. See Achievement Badges.



How am I?

See a monthly view of daily Check-Ins for meds adherence, mood, and stress.

Appointments

View a list of upcoming appointments.

Documents

Add and share documents with the site care team.

Messages

Use secure messaging to communicate with the site care team.

Resources

Access audio, video, and web resources to support people living with HIV.

Telehealth

Join telehealth visits with your provider or care team.

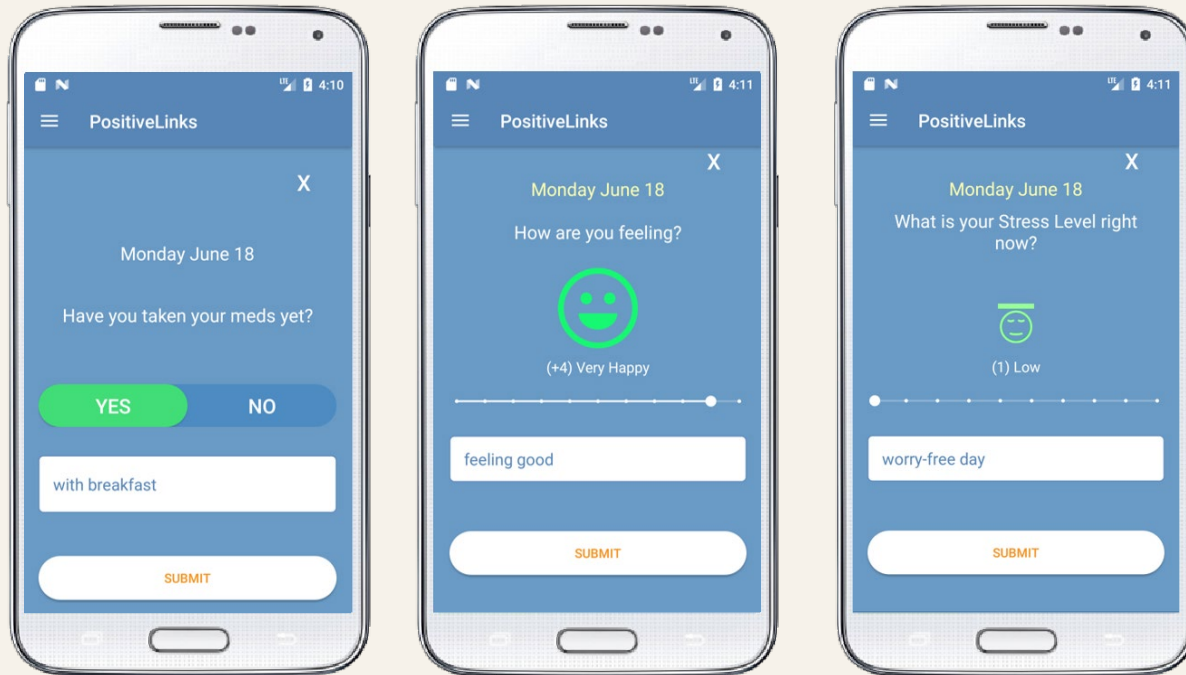
Sign out

Sign out of PL Cares.

Platform Security

- By "invitation" only access
- Password protected
- Biometric sign-in option
- Automatic Log-out
- Required anonymity on secured community board
- No personally identifying information stored

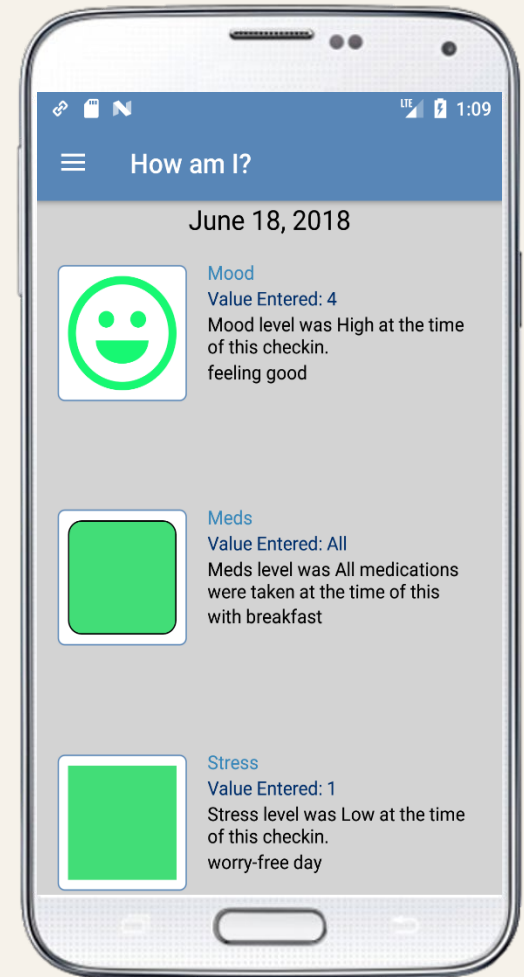
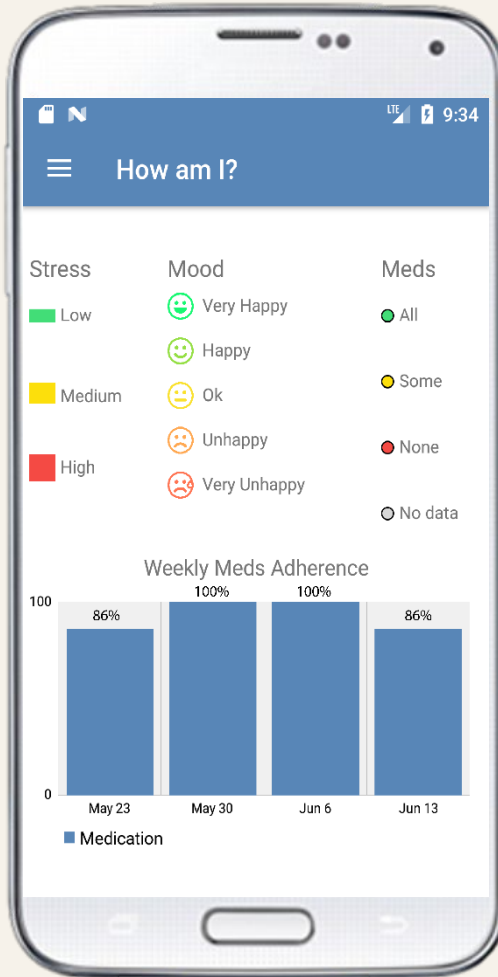
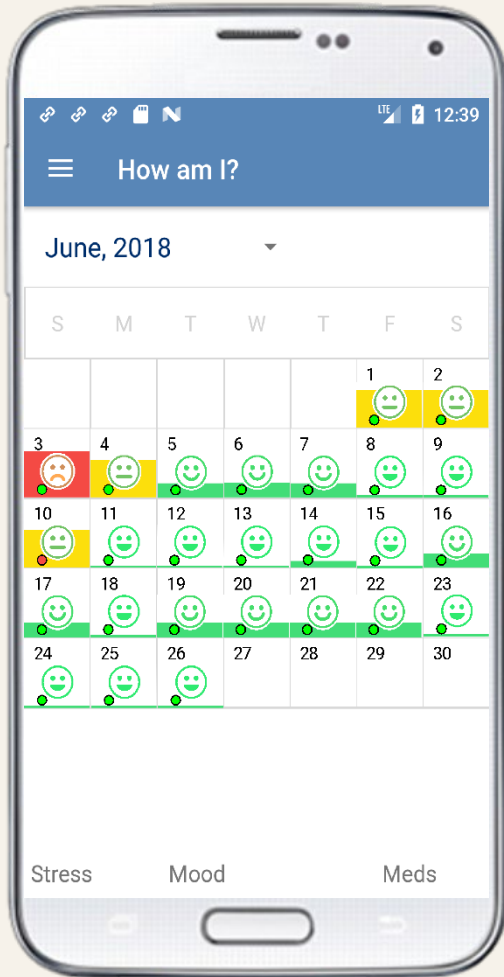
Self-monitoring Check-Ins



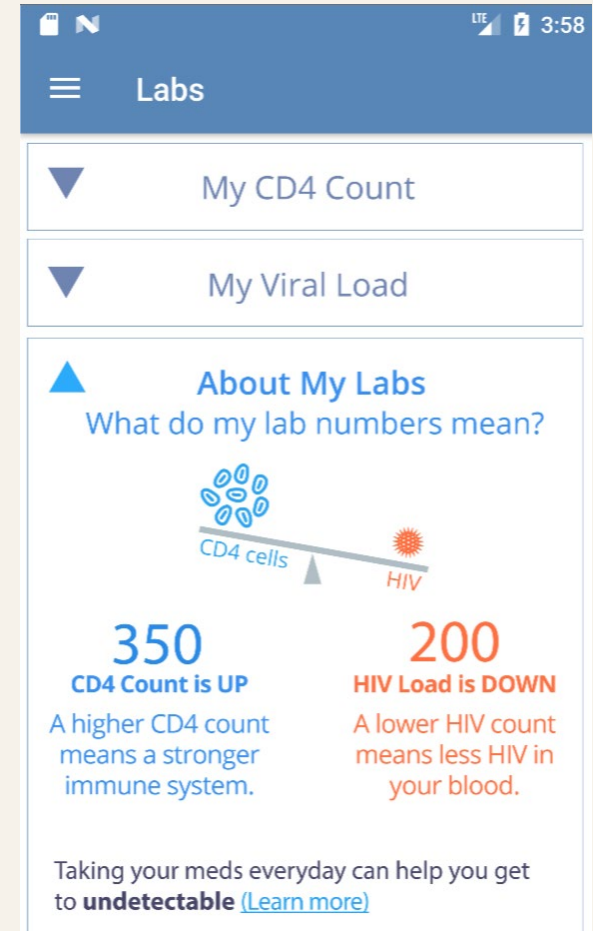
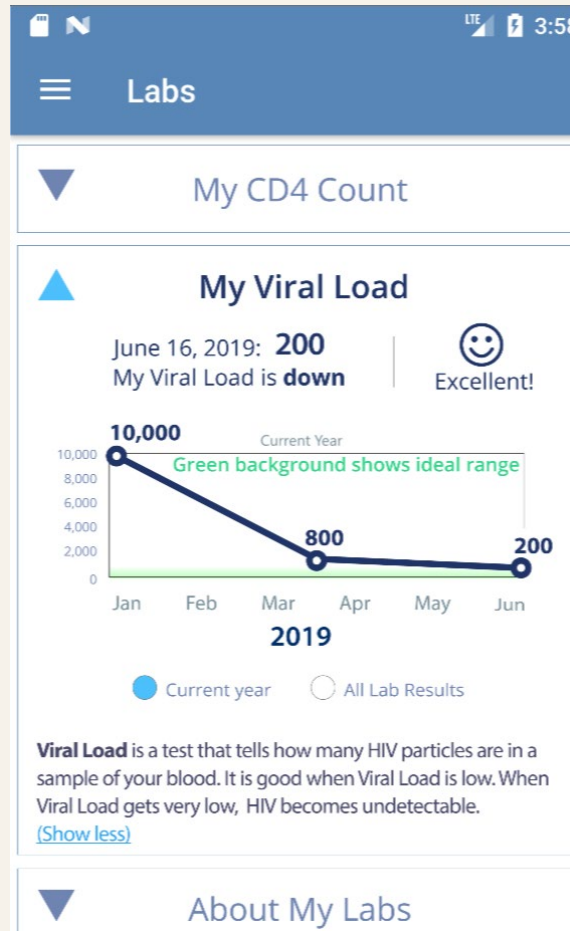
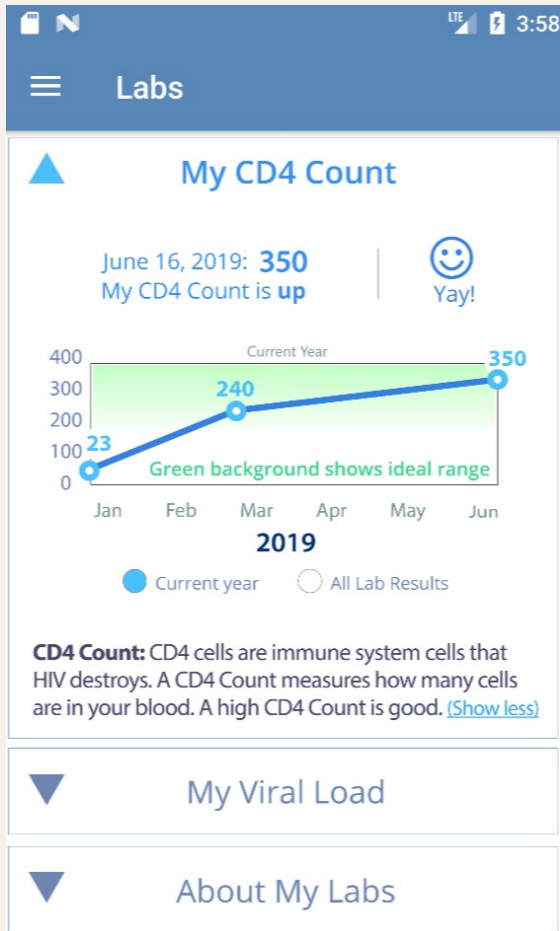
“The questions make me focus on my mood and my stress and makes me more in touch with myself you can say. When it pops up, it makes me stop and think. I usually don’t think about that kind of thing.”

- PL Participant

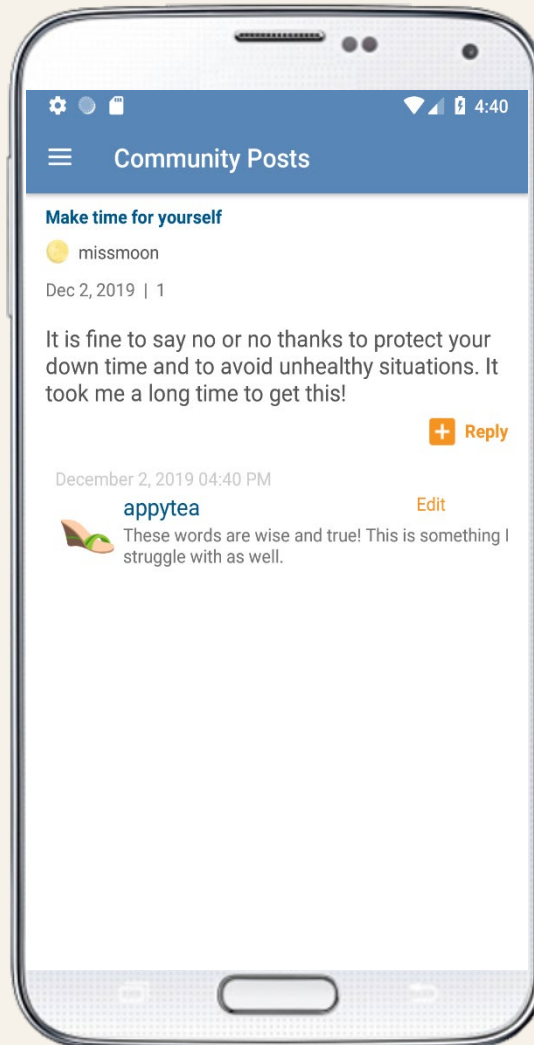
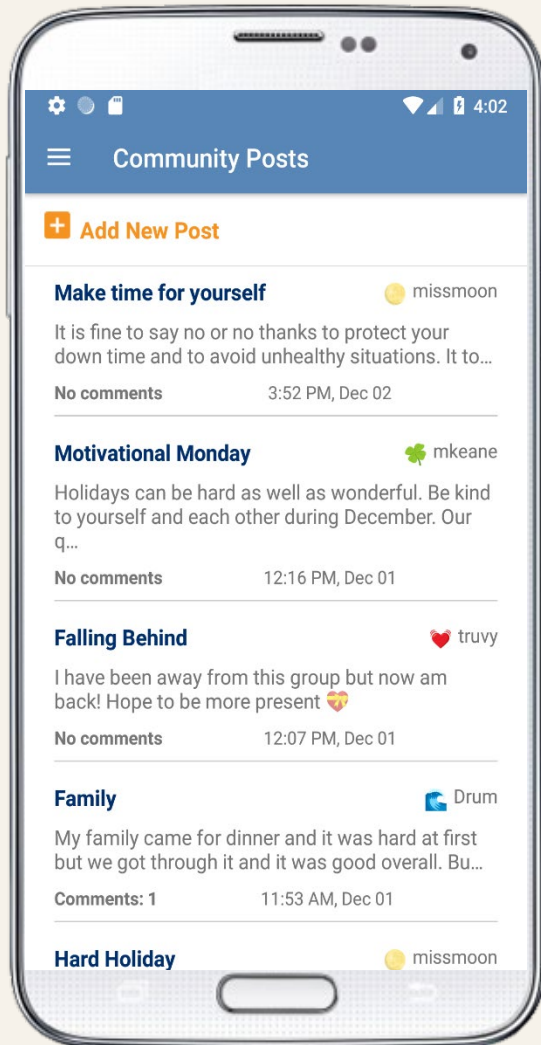
How am I?



Lab Results



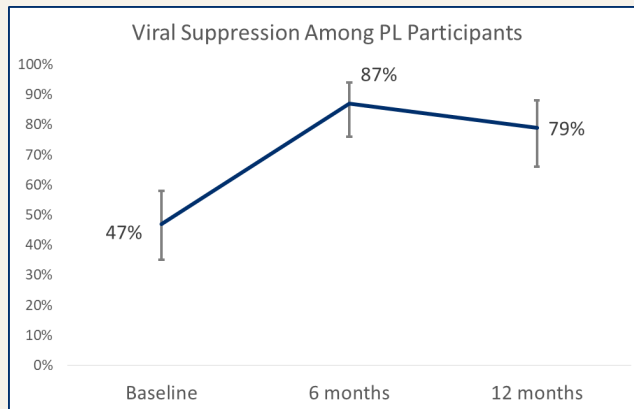
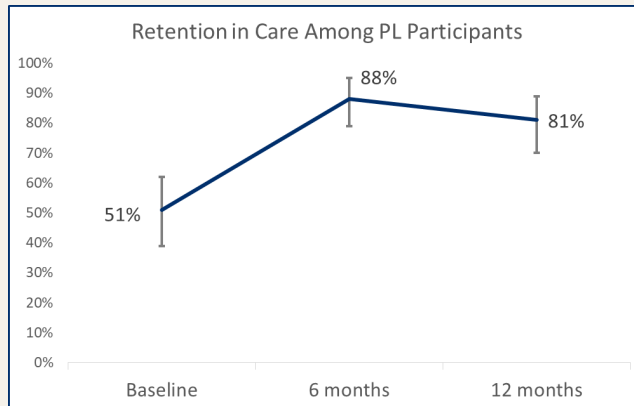
Community Board



“You get to talk to people who are going through exactly what you are going through. **When you are down somebody uplifts you**, when somebody else is down you can uplift them, it’s basically like one big family”

- PL Member

PL V1.0 Outcomes



- Significant **increases** in engagement in care (top) and in HIV viral load suppression (bottom) over one year of follow-up (n=77)
- **Stigma** scores are improved with increased used of the community message board.*
- **Social support** is sought and provided regularly. **

Dillingham et al, AIDS Pat Care STDs 2018, *Flickinger et al AIDS Behav 2018, **Flickinger et al AIDS Behav. 2017, ***Flickinger et al Telemed & eHealth 2019



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Linkage
HIV, one
details a
can be c

COMPENDIUM OF EVIDENCE-BASED INTERVENTIONS AND BEST PRACTICES FOR HIV PREVENTION



ABOUT

INTERVENTIONS



PositiveLinks

<https://www.cdc.gov/hiv/research/interventionresearch/compendium/lrc/index.html>
<https://ciehealth.org/intervention/positive-links/>



SCHOOL of MEDICINE

Outcomes Data

Enrollment



61% virally suppressed

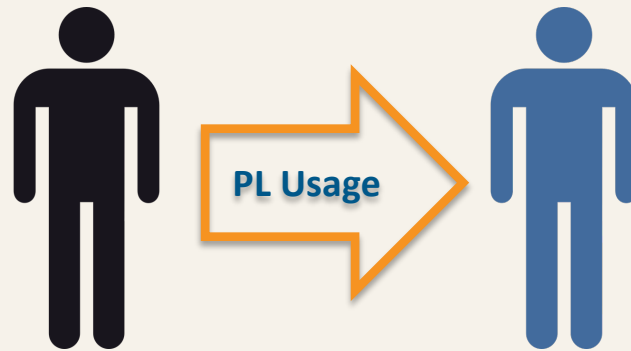
24 months with
PositiveLinks



84% virally suppressed

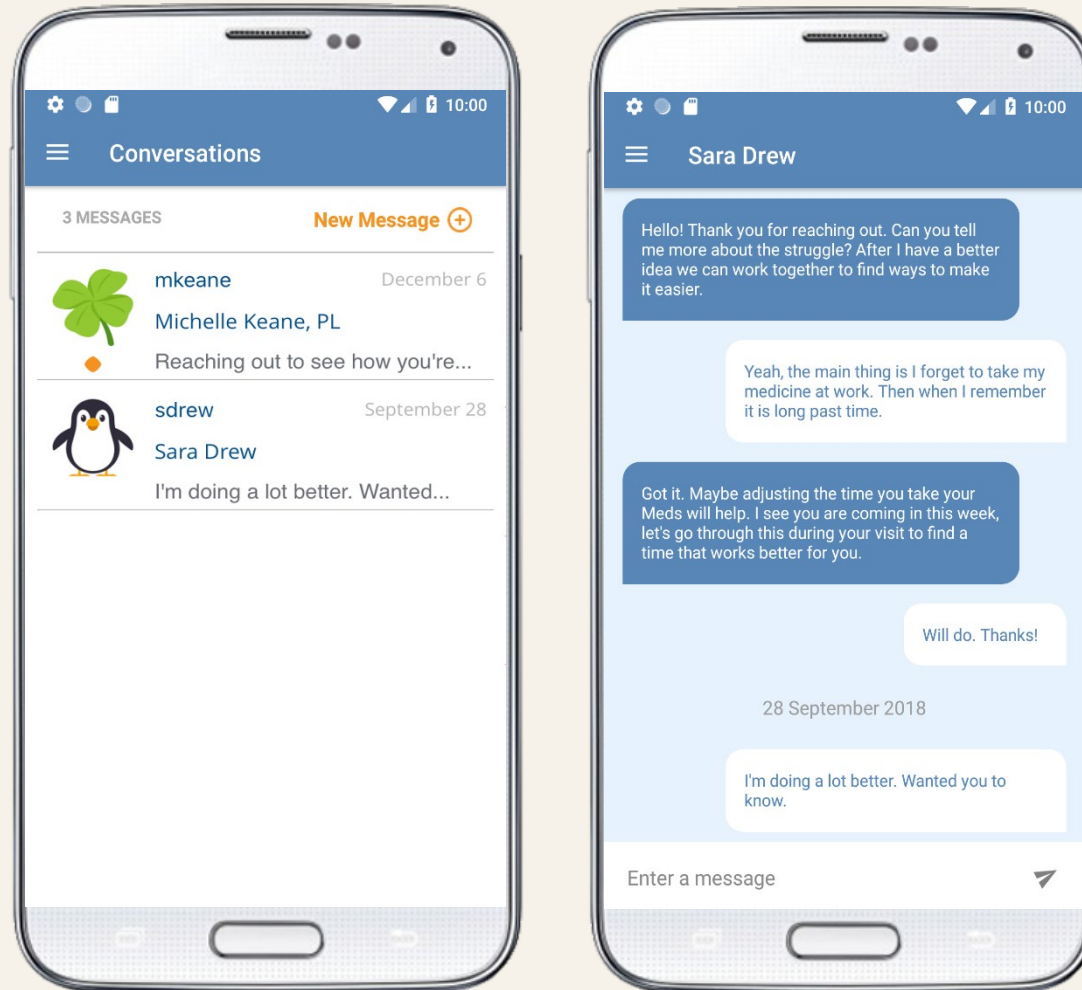
Canan CE, Grabowski M, PLOS One. 2020.

Outcomes Data

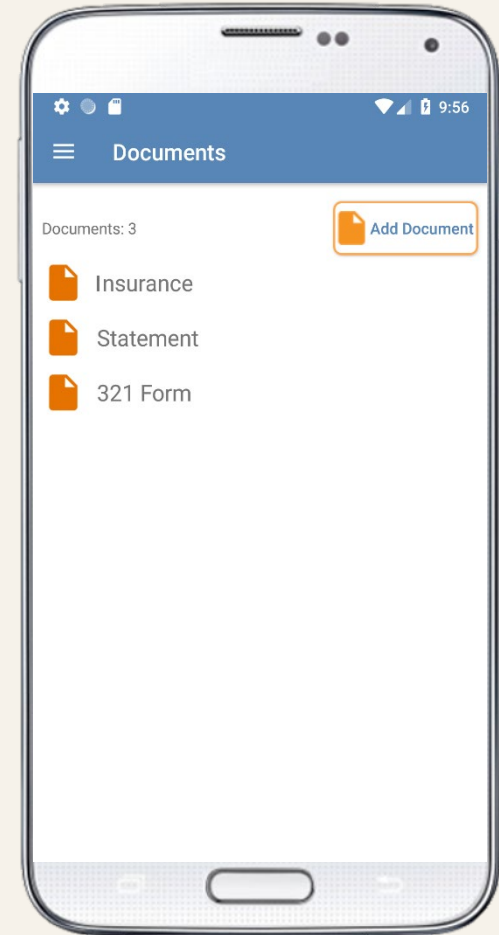
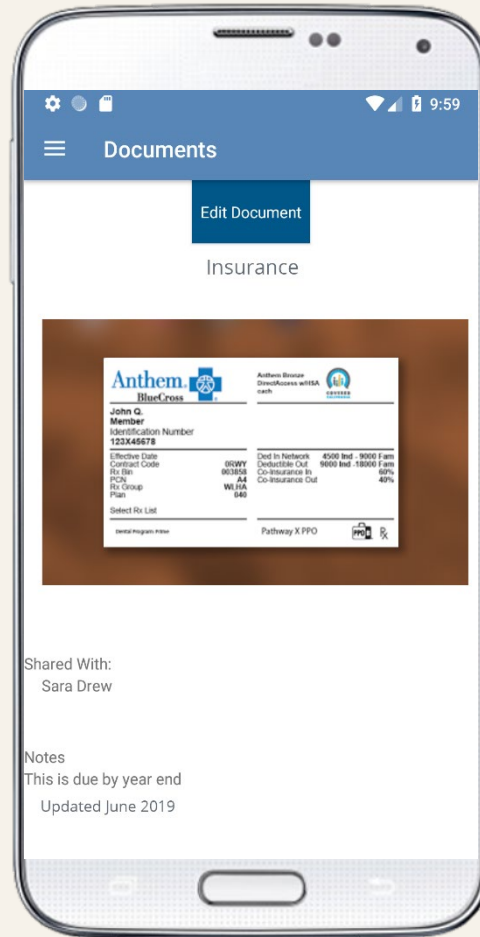
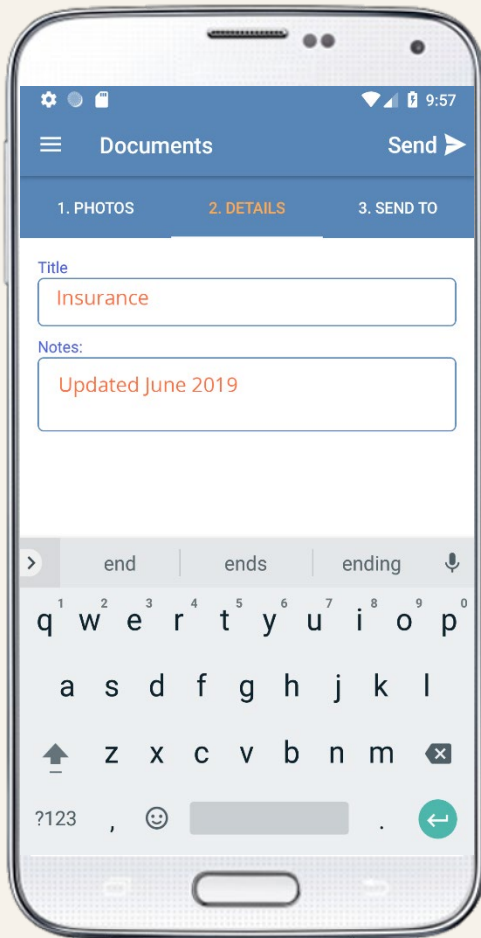


Higher PL usage was associated with a greater likelihood of achieving viral suppression and retention in care

Messaging



Document Upload

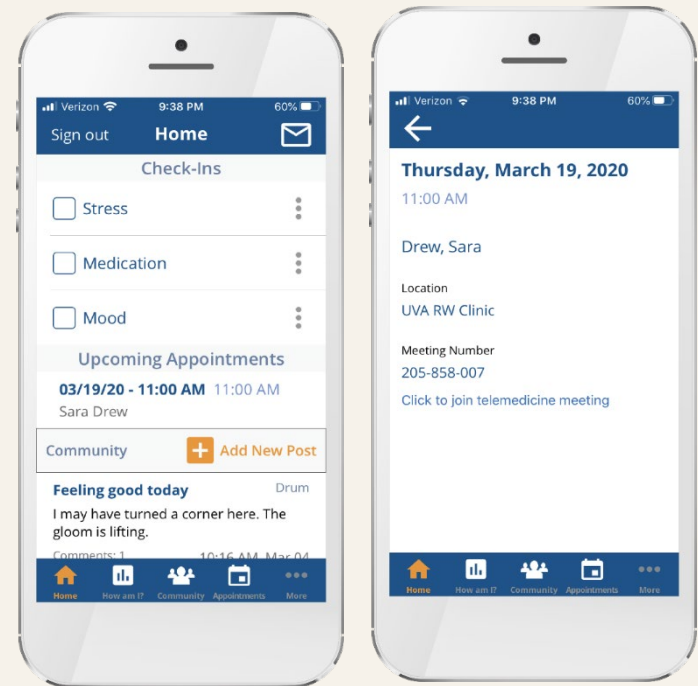


In the Time of COVID-19

Need: Staying connected while social distancing

Strategies:

- Remote PL Enrollment Best Practices
- Member-focused video training materials
- PL Telehealth!



Components of Success

PL SUCCESS



PROCESS

User-centered design



USAGE

High and Long term usage



EVIDENCE

Clinically Significant impact



IMPACT

Impact Related to usage



WARMTH

Users Feel supported



ENTHUSIASM

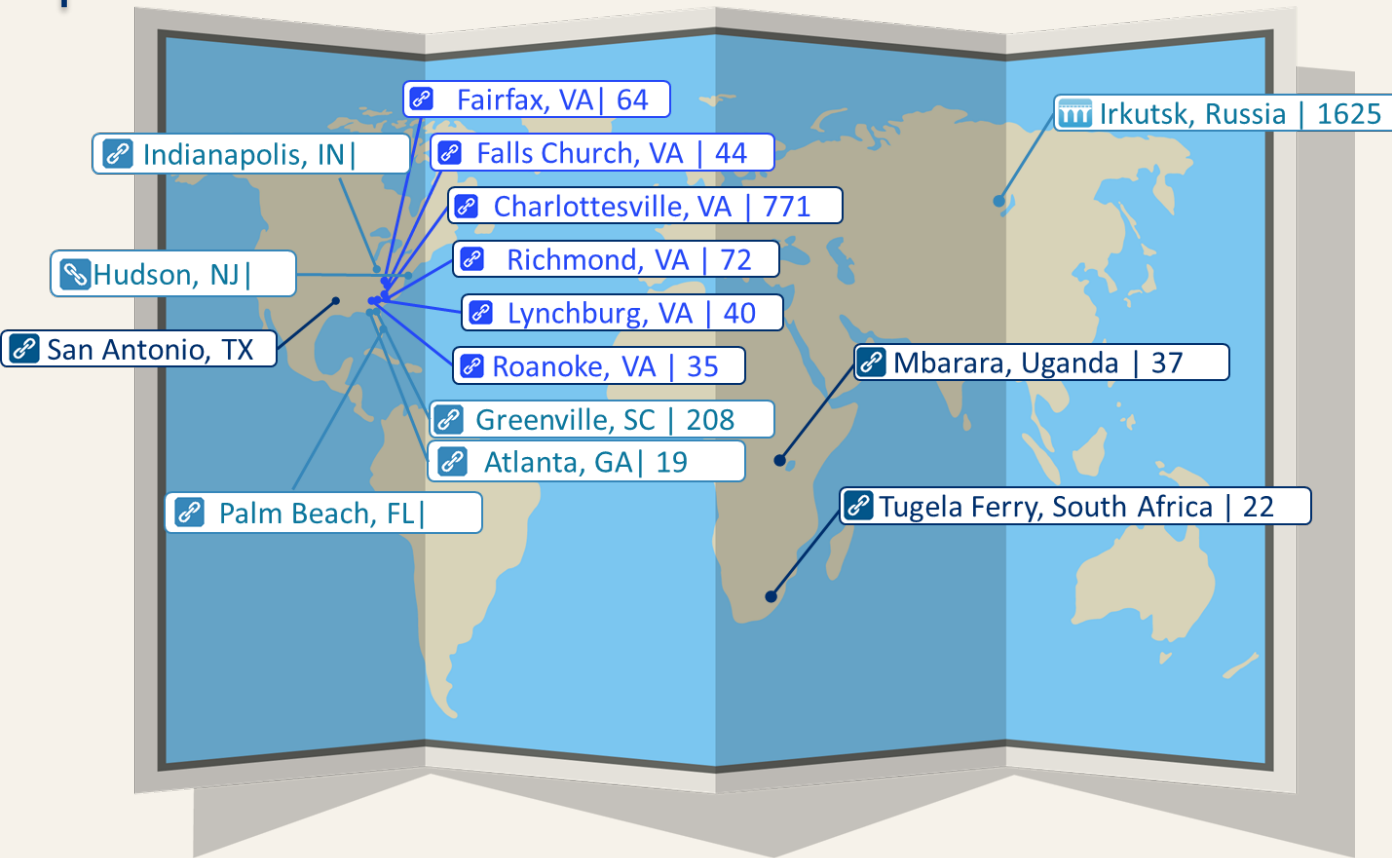
From users, team, and collaborators



R&D

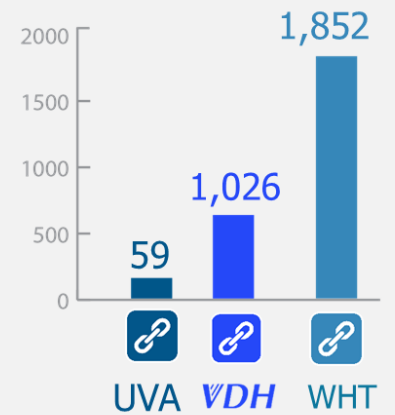
Ongoing research to improve

Where we are



Available in English, Spanish, Russian, and isiZulu

PL Enrollment
by deployment and location

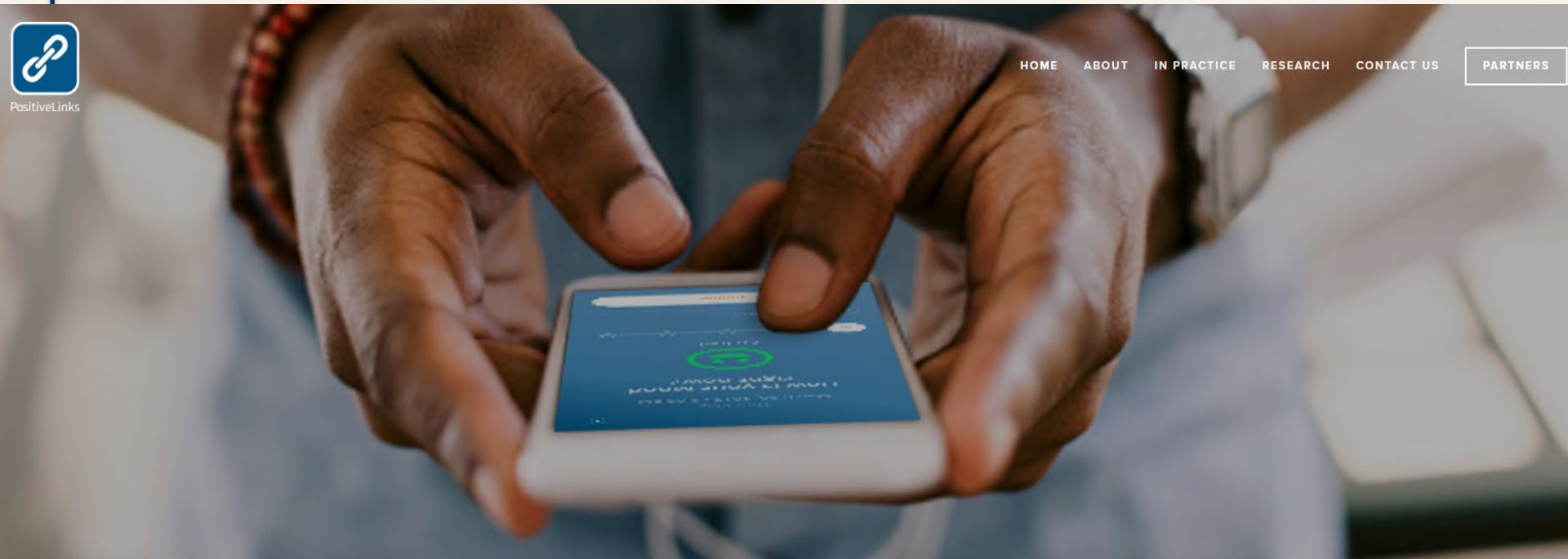


Total Enrollment
2,937

Member Feedback

“I don’t know if many of you realize it, but each and every one of us who uses this app is making a difference in someone else’s life battling every day of this new journey... **We all are making a difference together one day, one app, and one click at a time.**”

- PL Participant



What is PositiveLinks?

PositiveLinks is a clinic-centered engagement in care program that employs a tailored smartphone app with an embedded private social network to support people living with HIV and their care goals.

<https://www.positivelinks4ric.com/>