



Novel Strategies to Enhance Engagement in Self-Care & Support Service Providers

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The Challenge of Self-Management

- What do clients and patients do between in-person visits?
 - ✧ 3 to 6 months between medical visits
 - ✧ 7+ days between mental health visits, group meetings, & behavioral intervention sessions
 - ✧ Critical days & hours between intensive interventions (e.g., outpatient drug treatment)
- “How did work toward your goal go?”

Mobiles: Always On, Worn, Connected



mHealth

Use mobile devices to enhance health and wellness by extending health interventions and research beyond the reach of traditional clinical care.

our actions

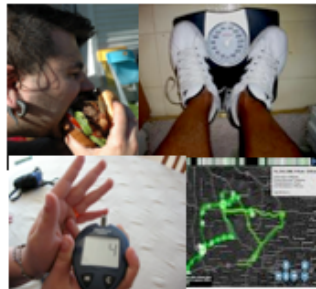


Photo: Marshall Astor, WWW

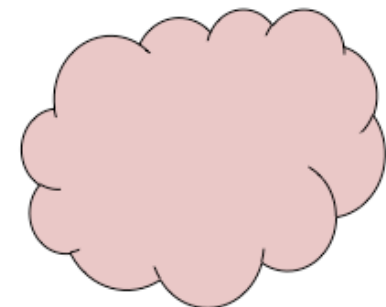
our self report



personal data repository



*experience
sampling streams
context and
activity traces*



processing

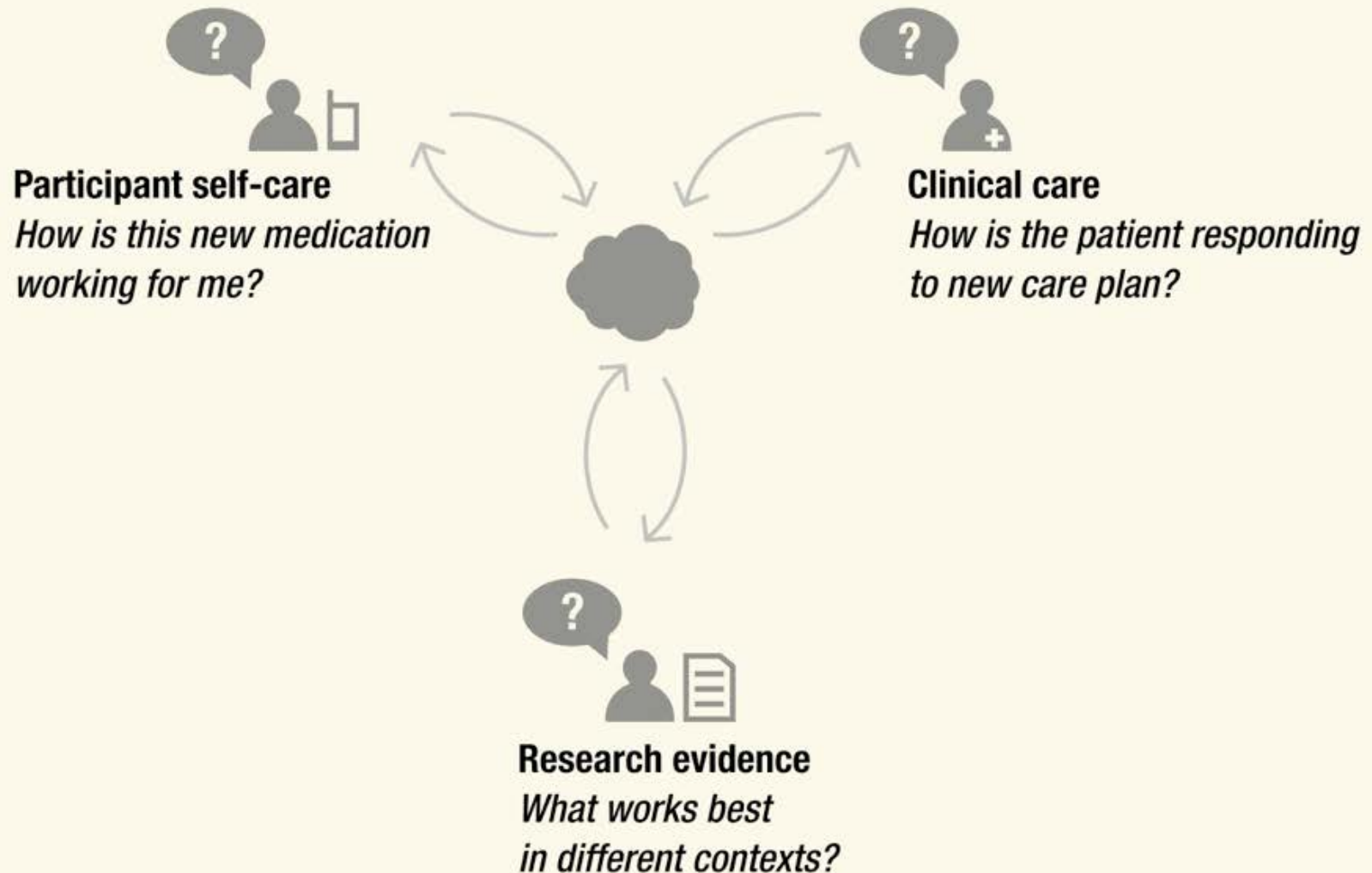
*aggregate measures,
trends, patterns*

event detection



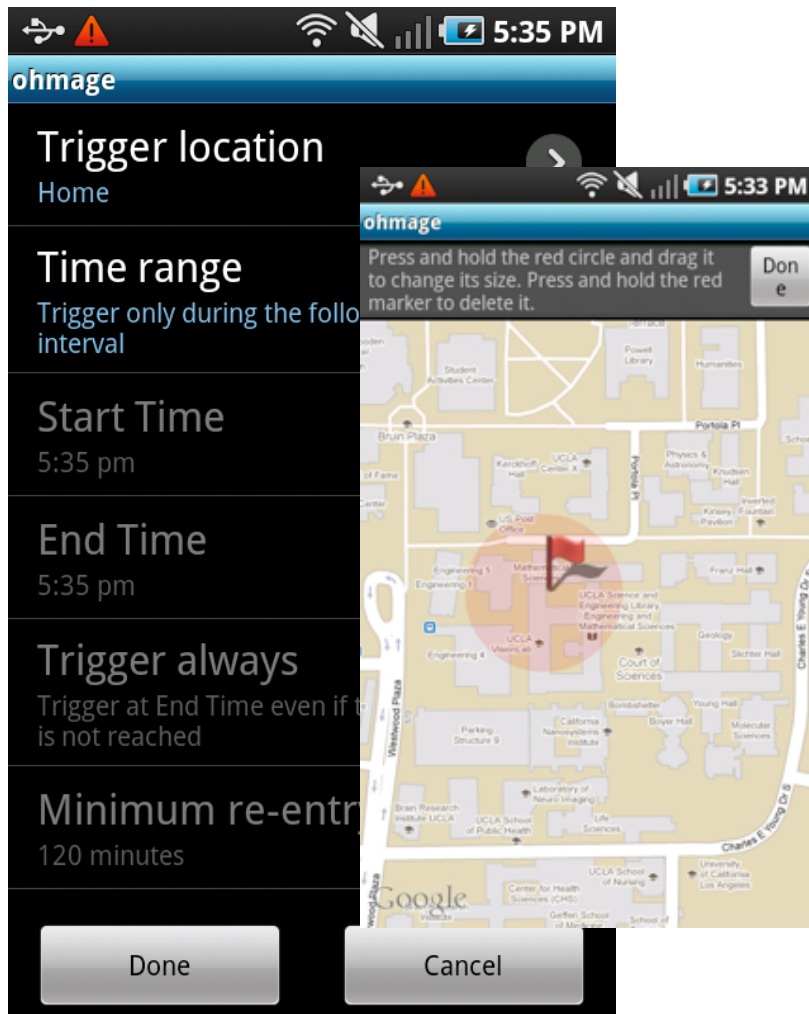
visualization

Driving with Dashboards: Data driven feedback loops

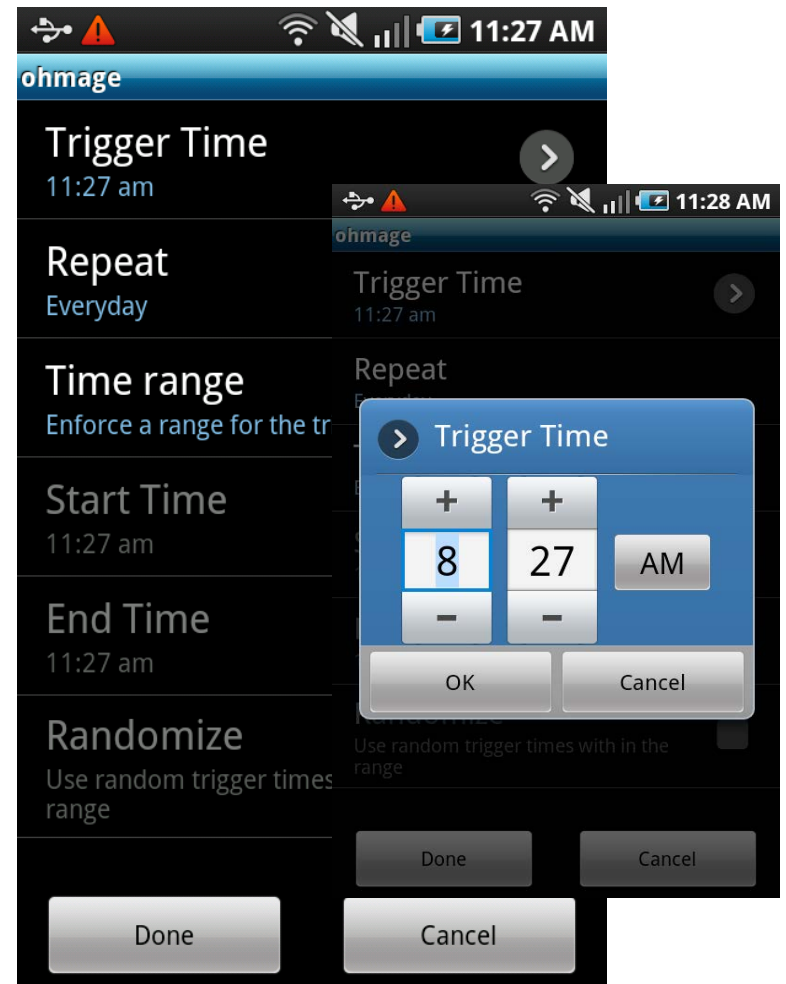


Smartphone Apps: Time, Location...

Location-based



Time-based



Behaviors, Coping Strategies, etc.

AT&T 2:02 PM Ohmage MWF All Surveys

In the last 3 hours, have you used any of the following substances? (check all that apply)

- ☐ No, I did not use
- ☐ Meth
- ☐ Alcohol (4 or less drinks at one time)
- ☐ Alcohol (5 or more drinks at one time)
- ☐ Marijuana or other THC
- ☐ Other amphetamines or uppers
- ☐ Cocaine (other than crack)
- ☐ Crack
- ☐ Ecstasy

AT&T 2:03 PM Ohmage MWF

In the last 3 hours, have you had ANAL (top or bottom) or VAGINAL sex?

- ☐ Yes
- ☐ No
- ☐ Refuse to answer

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AT&T 2:05 PM Ohmage MWF All Surveys

What type of sexual partners did you have ANAL or VAGINAL sex with, in the last 24 hours? (check all that apply)

- ☐ Primary, steady partner
- ☐ Casual or anonymous partner
- ☐ Exchange partner
- ☐ Refuse to answer

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AT&T 2:05 PM Ohmage MWF All Surveys

What is the HIV status(es) of the sexual partner(s), in the last 24 hours? (check all that apply)

- ☐ HIV positive (partner told me)
- ☐ HIV positive (I think or guess)
- ☐ HIV negative (partner told me)
- ☐ HIV negative (I think or guess)
- ☐ I don't know
- ☐ Refuse to answer

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Affect, Symptoms, QoL, Triggers, Cravings

AT&T 1:59 PM

Ohmage MWF All Surveys

In the last 3 hours, have you been feeling SAD?

☐ 0 - No, not at all

☐ 1 - A little

☐ 2 - Somewhat

☐ 3 - A lot

☐ 4 - Extremely

☐ Refuse to answer

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AT&T 1:58 PM

Ohmage MWF All Surveys

In the last 3 hours, have you experienced any of the following triggers to use meth? (check all that apply)

☐ At a gym

☐ Got some money

☐ Saw my family

☐ Saw a sex partner, an old boyfriend, or a fuck buddy

☐ Saw or went to a sex venue (bathhouse, sex club, bookstore, park, tea room)

☐ Visited hookup website (adam4adam.com, grindr.com)

☐ Watched porn

☐ Holiday (Halloween, NYE, Pride), Festival or Party

AT&T 2:02 PM

Ohmage MWF All Surveys

In the last 3 hours, have you craved meth?

☐ NO!!

☐ no??

☐ yes??

☐ YES!!

☐ Refuse to answer

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Self-Monitoring for Self-Management

- ***Awareness*** of feelings, symptoms, thoughts, actions, and patterns
- ***Behavior Change*** by reminder, mindfulness, or logging to track and motivate progress

Examples from study with People Living with HIV
at AIDS Project Los Angeles

Medication Adherence

- **47%** reported **improved adherence** from smartphone self-monitoring
 - “**Keeps me on track** with taking my medicine.”
(47, F, African-American)
 - “Helps me **take my medication on time**, and it helps me stay on track with not smoking.” (52, M, African-American)

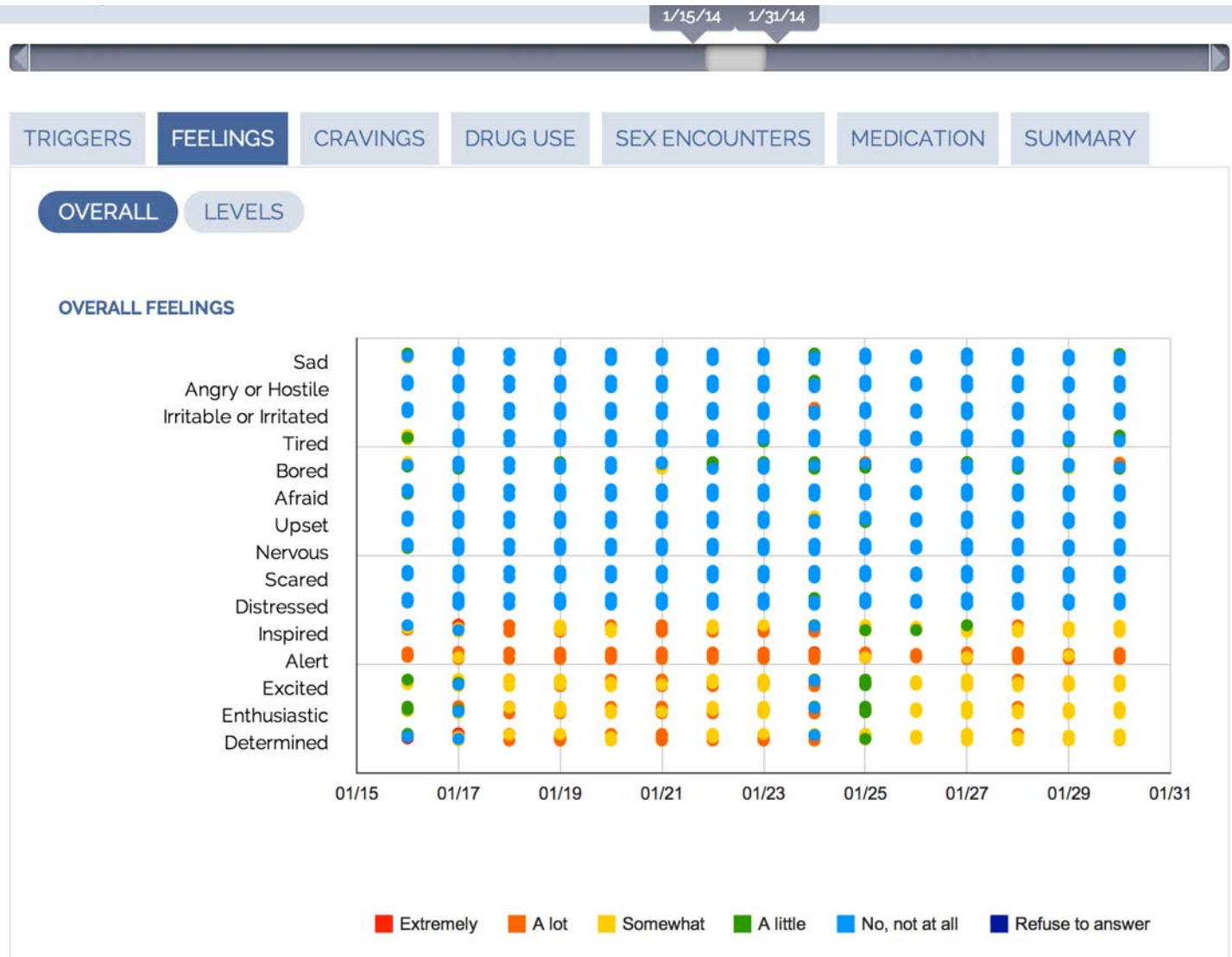
Stress and Mental Health

- **56%** reported **increased awareness**
 - “it was helpful to **keep track** of my moods and energy levels and **see how I was improving each day.**” (40, M, White)
 - “I didn’ t **realize how much I worried** about stuff (finances). I realized I worry about it every day.” (31, M, Latino)
- **29%** reported **therapeutic or cathartic benefits.**
 - “It helped me **handle my stress, moods, and emotions.**” (56, M, White)
 - “Nice to have an **outlet** to express myself. It takes a load off my back.” (38, M, Latino)

Substance Use

- **44% reported increased awareness**
 - “I saw that when I got bored, lonely, wasn’t feeling healthy, or thought about my illness, it triggered me to do drugs.” (49, M, African-American)
 - “**Helped me realize** that we usually smoked weed to get intimate.” (31, M, Latino)
- **6% reported substance use behavior changes.**
 - “**Helped me cut back on smoking cigarettes** because it made me think about exactly how many I smoked.” (35, M, White)

Dashboards for Providers & Patients



Ex., work with Dr. Cathy Reback at Friends Research Institute:
“Mobile EMA to Support MSM in Outpatient Methamphetamine Treatment”

1/9/14

1/23/14

TRIGGERS

FEELINGS

CRAVINGS

DRUG USE

SEX ENCOUNTERS

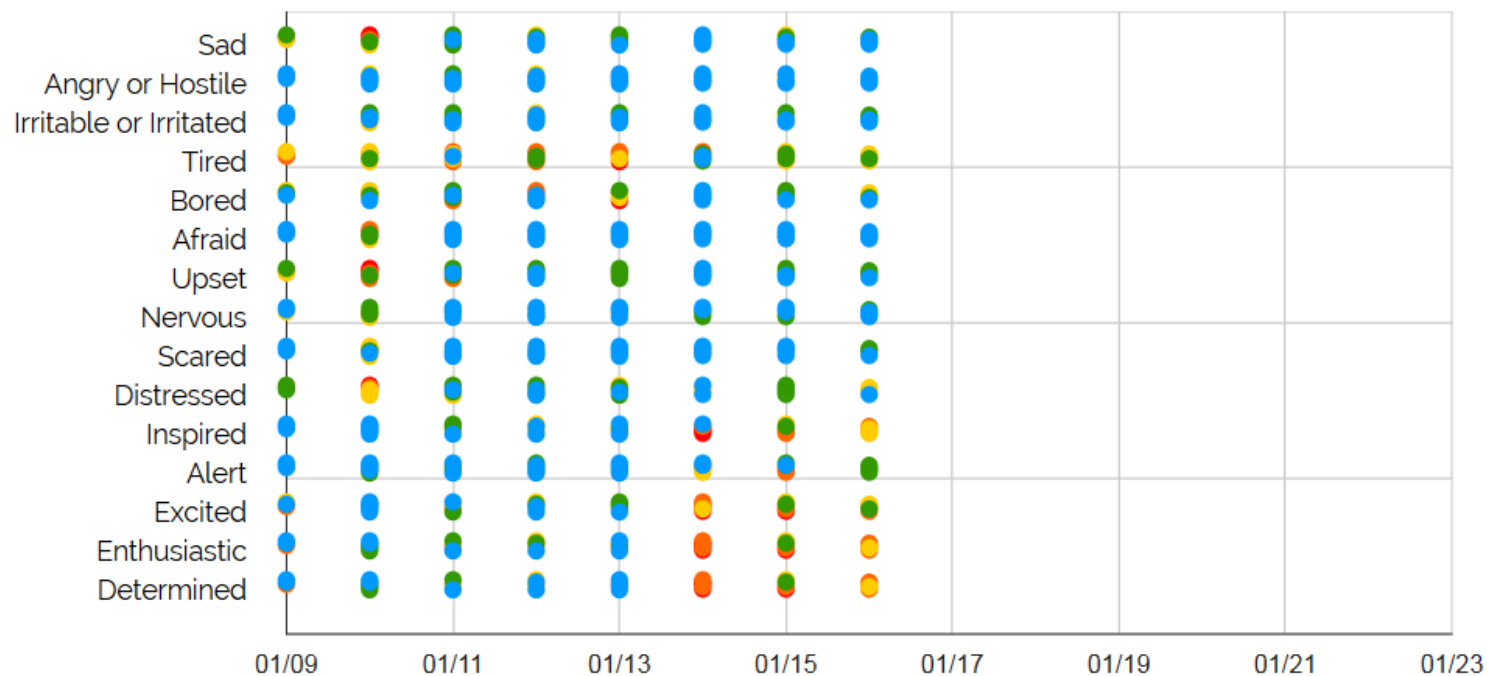
MEDICATION

SUMMARY

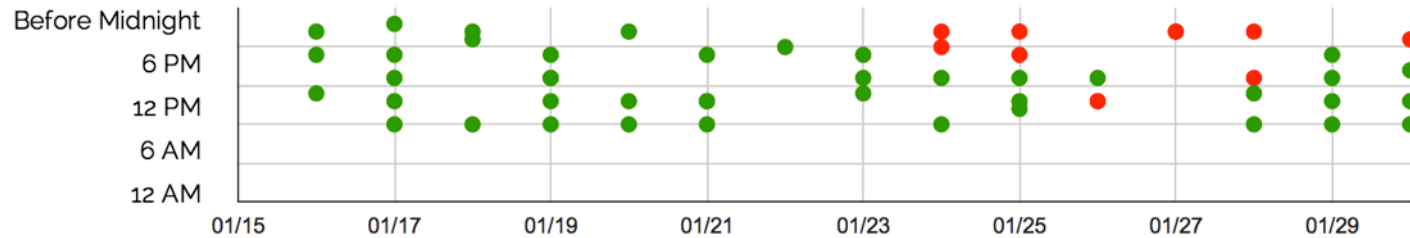
OVERALL

LEVELS

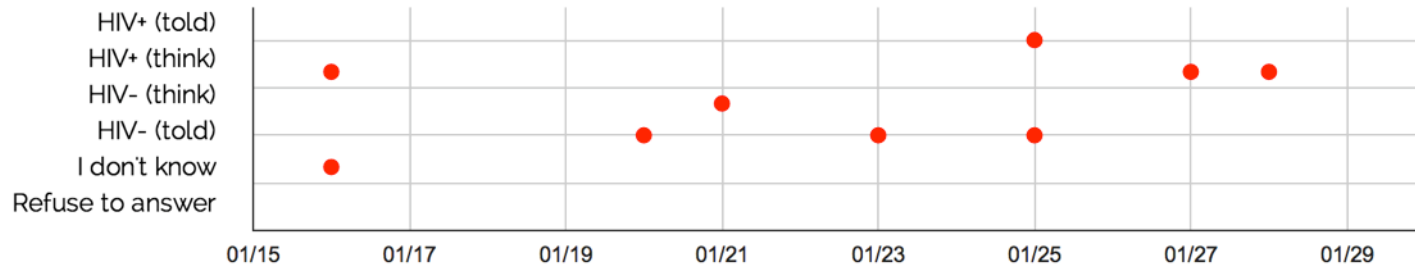
OVERALL FEELINGS



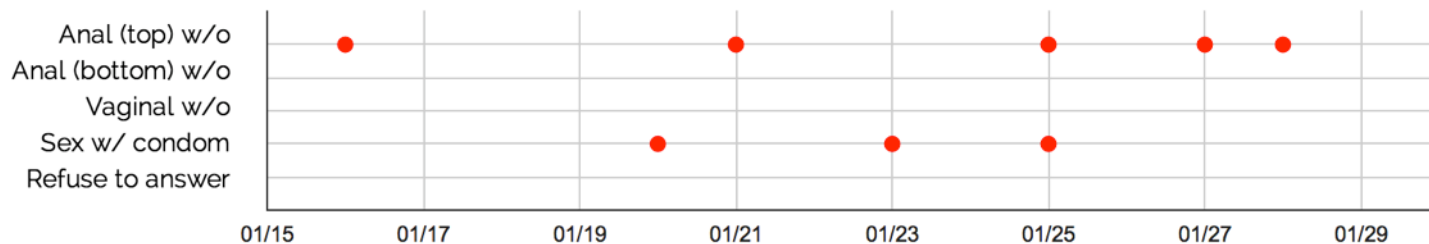
METH USE



SEX PARTNER HIV STATUS(ES)

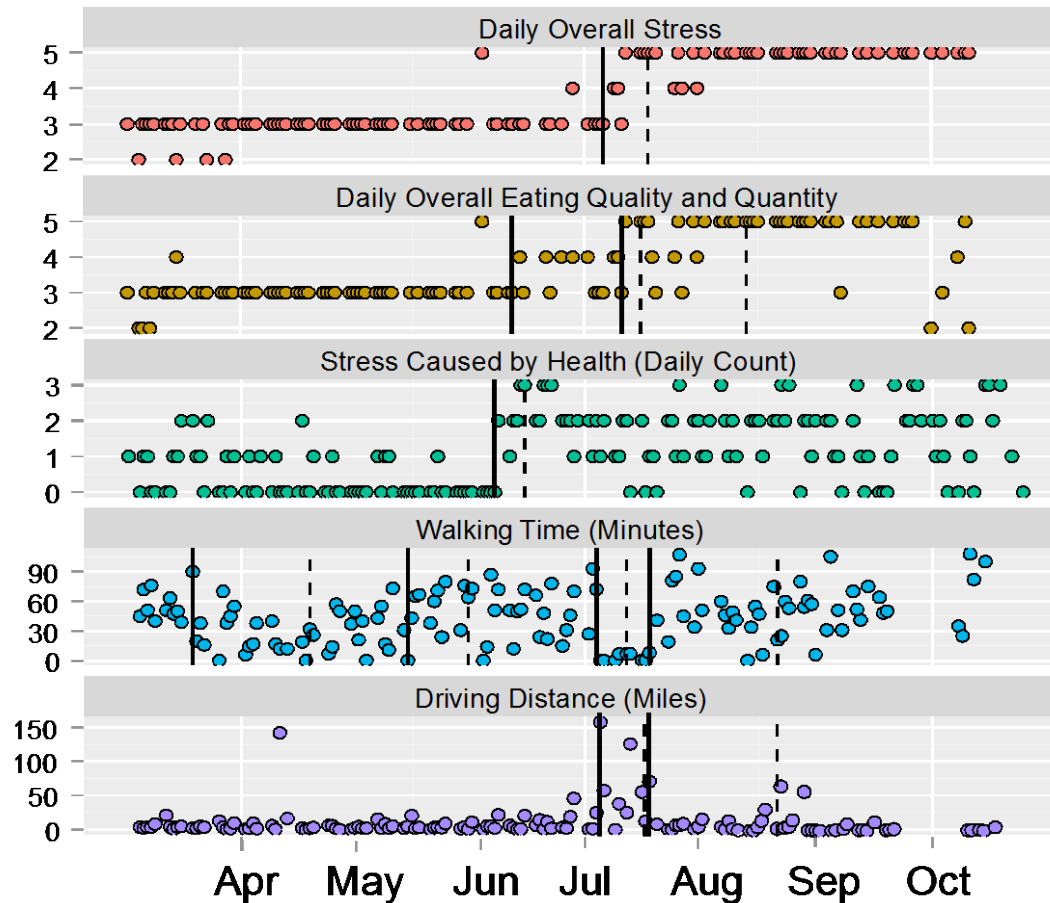


SEX ACTIVITIES AND CONDOMS



From APC 1 with Dr. Cathy Reback at Friends Research Institute:
 “EMA to Support MSM in Outpatient Methamphetamine Treatment”

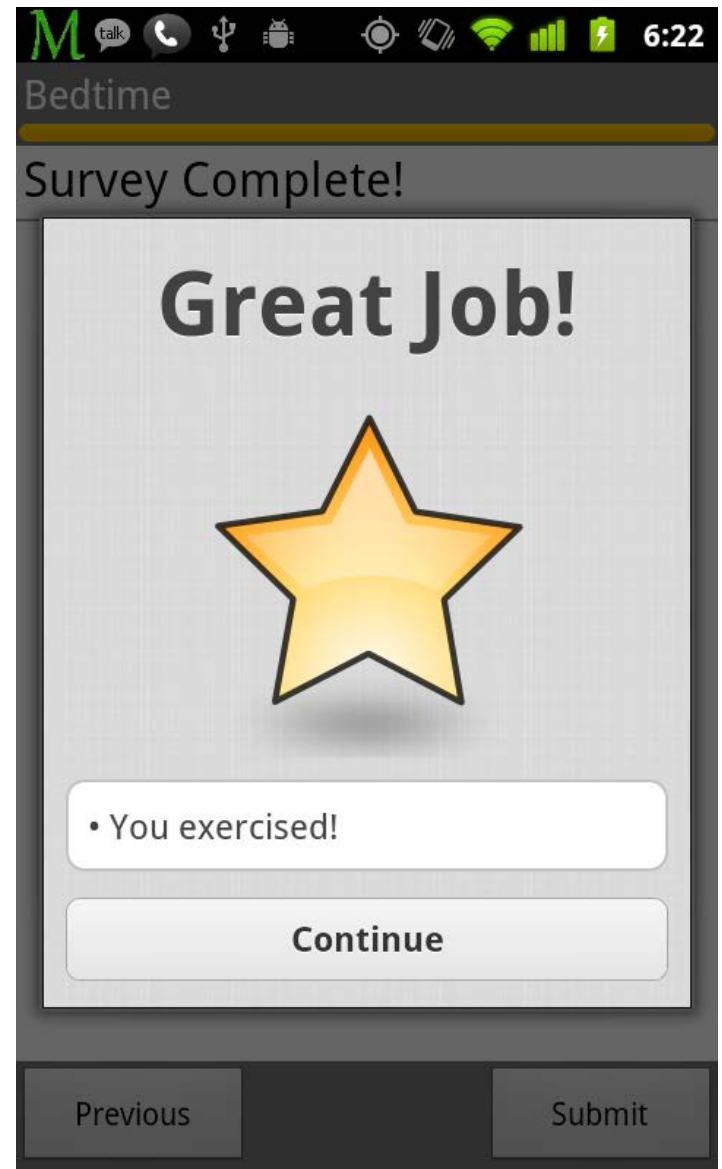
Life Streams – Pattern Change Detection



Lifestreams Dashboard: an interactive visualization platform for mHealth data exploration

Cheng-Kang Hsieh, Hongsuda Tangmunarunkit, Faisal Alquaddoomi, John Jenkins, Jinha Kang, Cameron Ketcham, Brent Longstaff, Joshua Selsky, Dallas Swendeman, Deborah Estrin, Nithya Ramanathan
University of California, Los Angeles, USA

Feedback to Patients/Clients, even Providers



LAC DHSP Medical Care Coordination

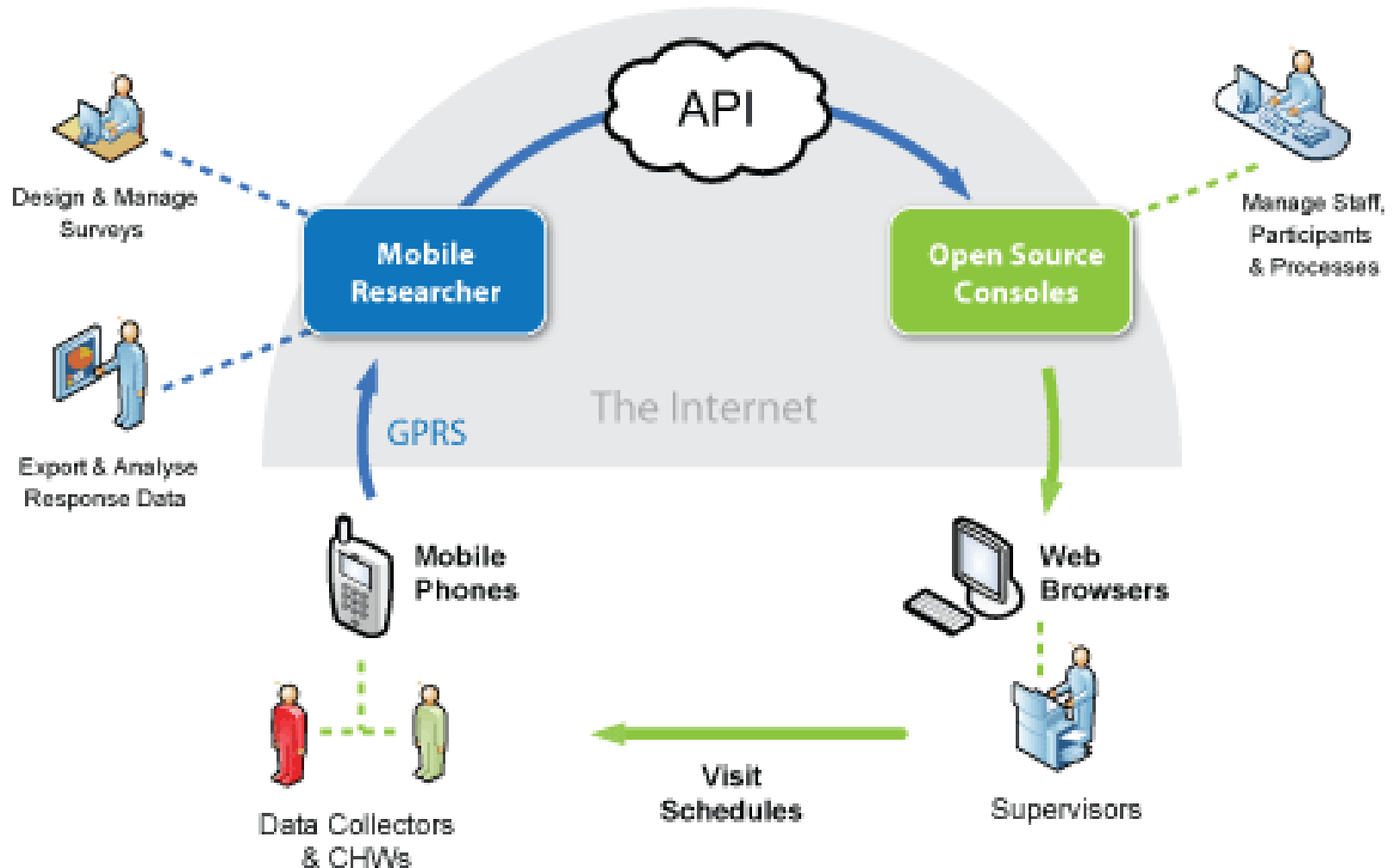
Acuity-Driven Service Intensity

Table 2: Minimum Service Delivery by Acuity Level

<u>MCC SERVICE ACTIVITY (MINIMUM)</u>						
<u>ACUITY LEVEL</u>	<u>Registration/ Screening</u>	<u>Re- Assessment</u>	<u>ICP</u>	<u>Brief Interventions</u>	<u>Ongoing Follow-Up</u>	<u>Case Conference</u>
<u>Severe</u>	<u>Every 6 months</u>	<u>Every 30 days</u>	<u>Every 30 days</u>	<u>Weekly</u>	<u>Weekly</u>	<u>Monthly</u>
<u>High</u>	<u>Every 6 months</u>	<u>Every 90 days</u>	<u>Every 90 days</u>	<u>Monthly</u>	<u>Monthly</u>	<u>Quarterly</u>
<u>Moderate</u>	<u>Every 6 months</u>	<u>Every 6 months</u>	<u>Every 6 months</u>	<u>Every 90 days</u>	<u>Monthly</u>	<u>Every 6 months</u>
<u>Self-managed</u>	<u>Every 6 months</u>	<u>n/a</u>	<u>n/a</u>	<u>Referrals as needed</u>	<u>As needed</u>	<u>n/a</u>

Protocol & materials: <http://publichealth.lacounty.gov/dhsp/MCC.htm>

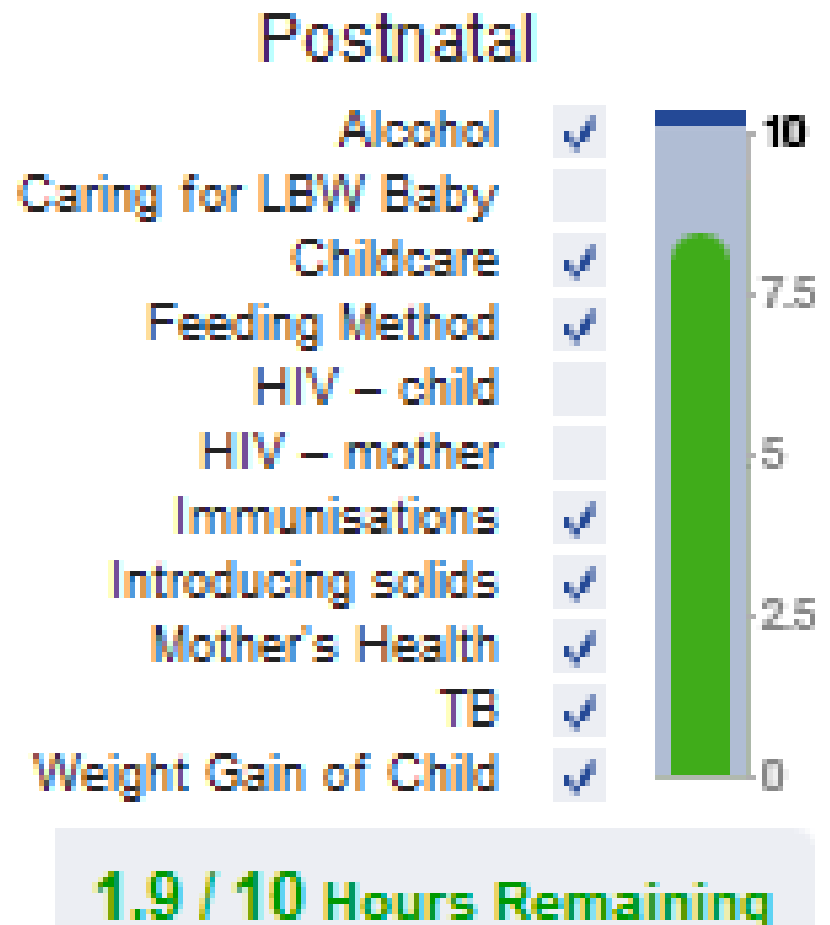
Care Coordination & Case Management



Fieldworker Support



Fidelity Monitoring & Support for Intervention Deliverers (& Dose/Exp.)



Supervision & Support



Thank you

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UCLA

AIDS Institute

Center for AIDS Research