

*Participatory Development of Technology-Based Support
Tools for a Newly Implemented, Department Of Public
Health Funded, Medical Care Coordination Model For
Improved Retention on the Treatment Cascade*

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Medical Care Coordination (MCC)

- LAC Dept PH, Division of HIV & STD Programs funded LAGLC in Fall 2012 to implement
- LAGLC's Jeffrey Goodman Clinic quadrupled staff during roll-out of program in 2013
- Integrates medical & non-medical case mgmt.
- Coordinates behavioral interventions and support services with medical care
- Team members co-located at patient's medical home
- Focus on moving patients to a "self-managed" state

MCC – 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>

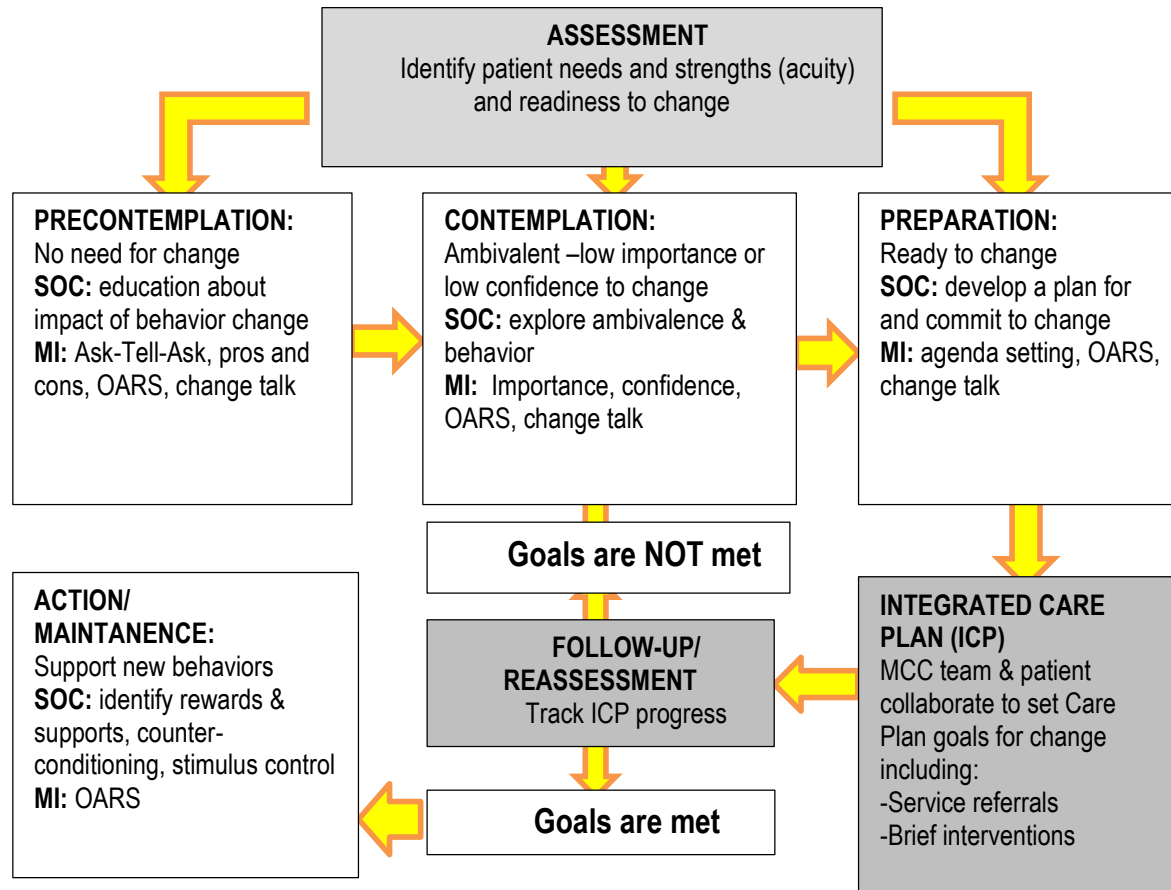
Protocol & materials: <http://publichealth.lacounty.gov/dhsp/MCC.htm>

MCC - Multidisciplinary team

- **Medical Care Manager (MCM) – RN**
 - Suggested lead coordinator
 - Delivers brief interventions on: patient education, treatment adherence, managing side effects, medical nutrition therapy, co-infections, preventative care and risk reduction.
- **Patient Care Manager (PCM) – MA level counselor**
 - Assess psychosocial needs
 - Delivers brief interventions on: substance misuse, mental health, risk reduction and disclosure/partner notification.
- **Case Workers (CW) – BA level counselor, nurse, SW**
 - Assists MCM and PCM with patient monitoring, reassessment, service linkages, plan updating, patient follow-up, and tracking outcomes.
 - liaison between Counseling & Testing sites and the medical clinic
- **Administrative Coordinator & Support team (3 people)**

MCC Brief Interventions: Motivational Interviewing w/ SoC

Figure 1. Medical Care Coordination Model Components: Stages of Change (SOC) and Related Behavior Change Strategies



Adapted from (Abramowitz, Flattery, Franses, & Berry, 2010).

SOC=stages of change; MI=motivational interviewing; OARS=open-ended questions, affirmations, reflections and summaries

Research Goal - Tech Supports for MCC

mHealth

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

our actions

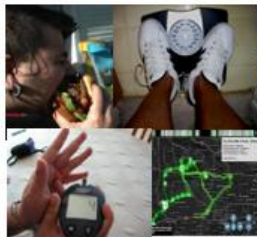


Photo: Marshall Astor, WWW

our self report



personal data repository



experience sampling streams
context and activity traces



visualization

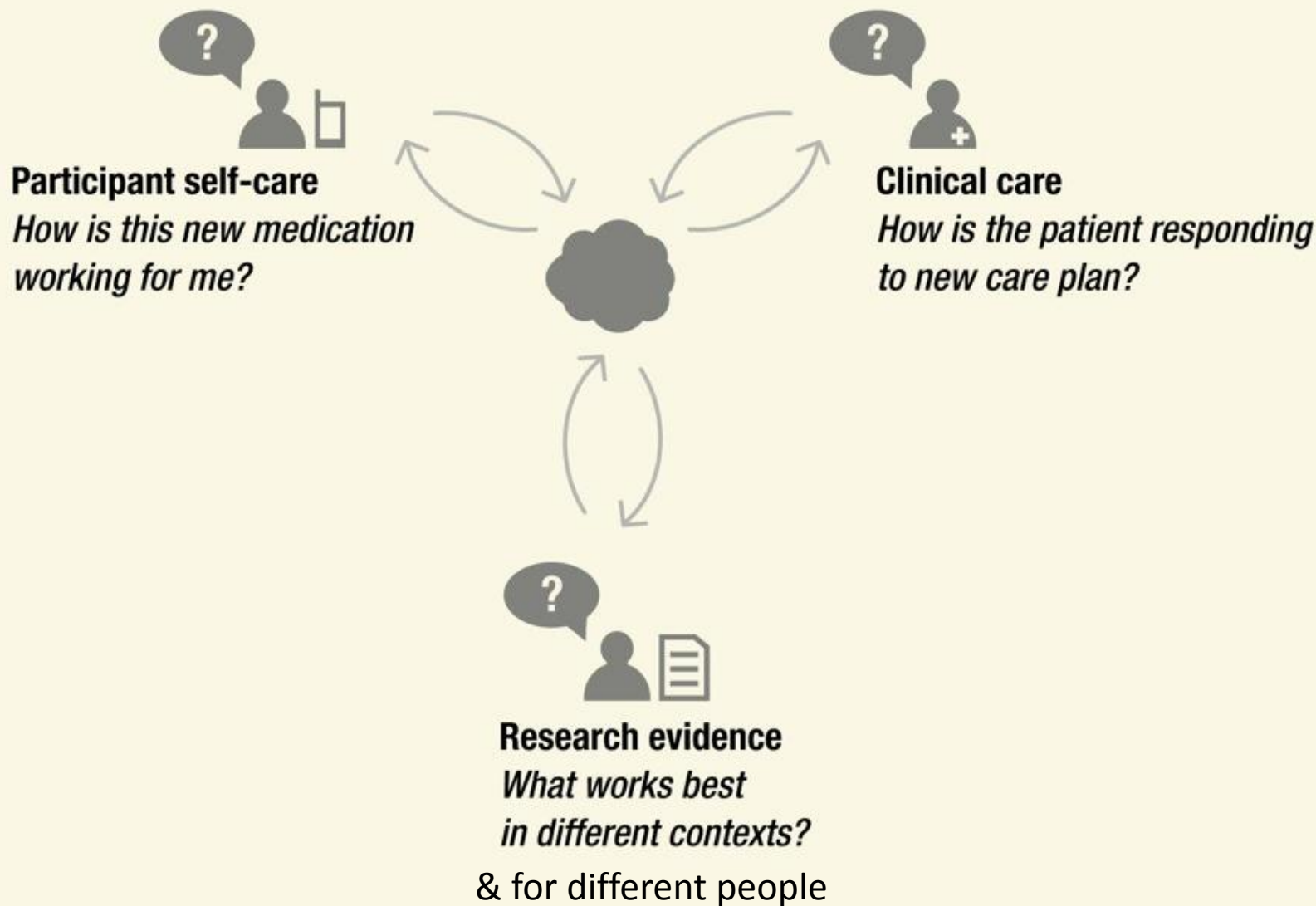
aggregate measures,
trends, patterns

event detection



processing

Data driven feedback loops for patient-centered care



Self-monitoring for self-management & Ecological Momentary Intervention

- ***Self-monitoring***
 - ***Awareness*** of feelings, symptoms, thoughts, actions, and patterns
 - ***Behavior Change*** by reminder, mindfulness, or logging to track and motivate progress
- ***Ecological Momentary Interventions (EMI)***
 - In the moment interventions,
 - Text messages, IVR calls, smartphone app prompts
 - Tailored to individual's needs and patterns

mchorus.com

create interactions, send custom messages back based on specific conditions that you set

APPS PROFILE LOGOUT

chorus

Blood sugar monitor

compose mobilize celebrate

interactions

NEW x Main menu

hotline go to clinic normal range too high

Prompt 1
Hello! What is your blood sugar today?
39/160

Error Message
Oops, I didn't get that. Please respond with your current blood sugar.
70/160

if response

less than 40 +

greater t 39 and less than 120 +

greater t 120 +

then

go to next interaction: x
2. less than 40
save data

go to next interaction: x
5. normal range
save data

go to next interaction: x
6. too high
save data

+ ADD

next >

reach out to users with recurring schedules

Schedule close

SETUP HISTORY

what
send out the following message:

how
use the following method to reach out:

who
contact the following people:

when
send the first message on:
 at

do you want to setup a recurring schedule?
 repeat every
for

make another attempt if there's no response?
2nd at X
3rd at X

+ ATTEMPT

here's the plan

READY?
just click 'on' to launch! OFF

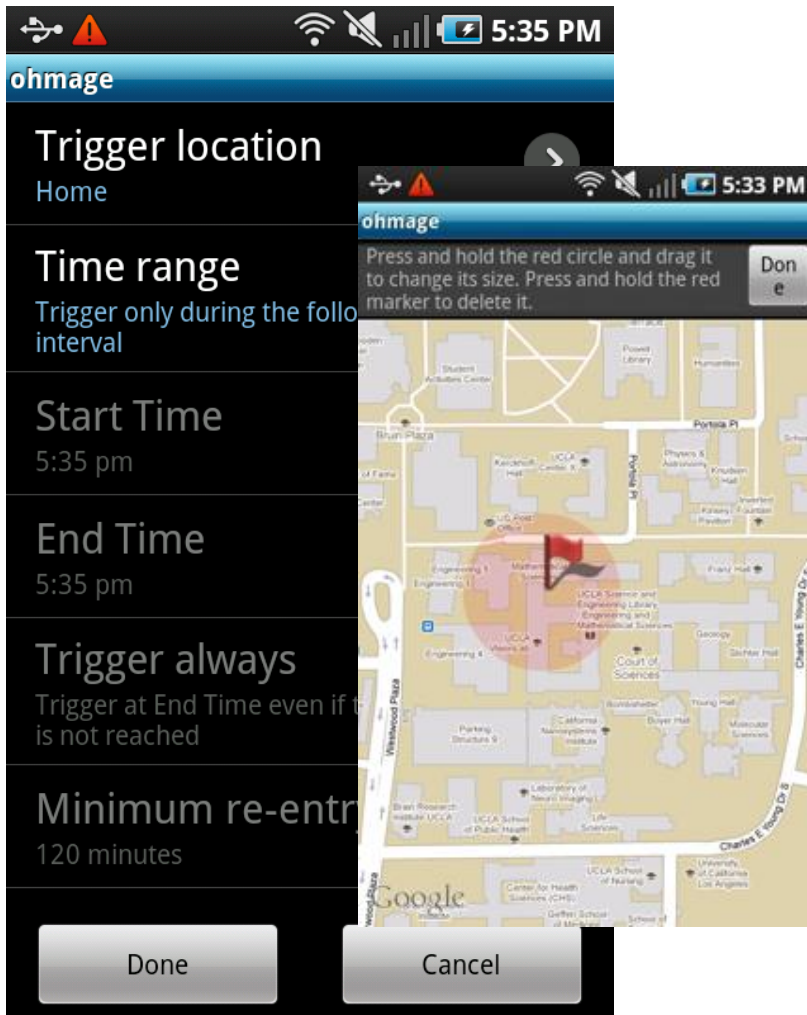
Chorus will reach out on:

Monday, Nov 04, 2013	7:45am	X
Thursday, Nov 07, 2013	7:45am	X
Sunday, Nov 10, 2013	7:45am	X
Wednesday, Nov 13, 2013	7:45am	X
Saturday, Nov 16, 2013	7:45am	X
Tuesday, Nov 19, 2013	7:45am	X

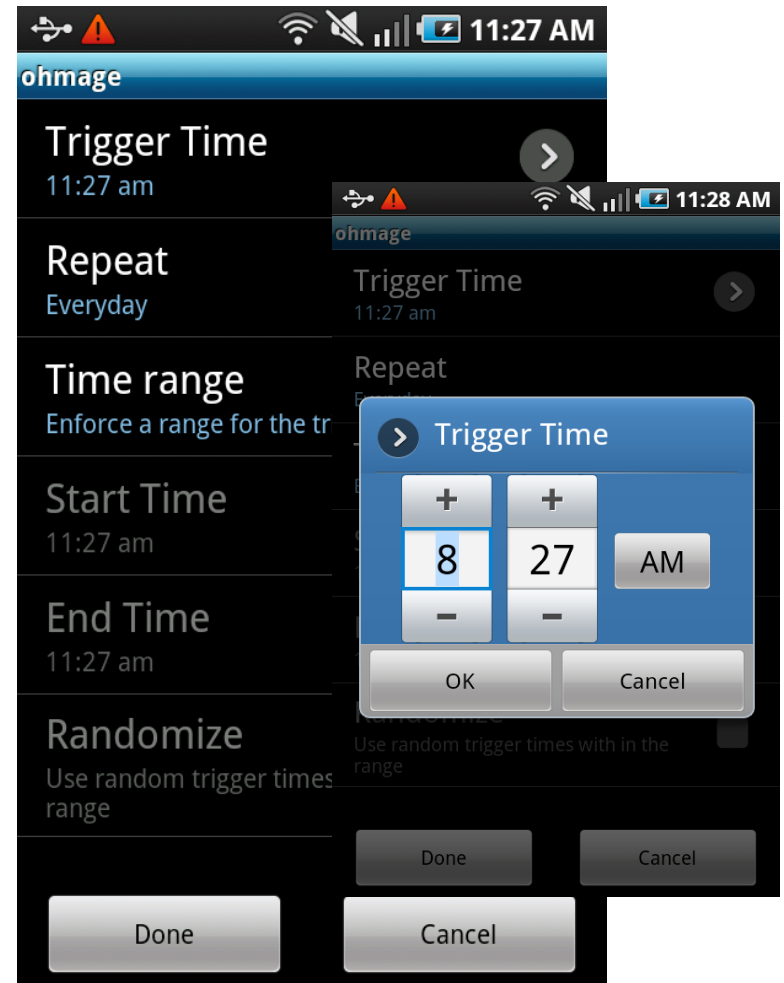
+ SCHEDULE

Smart Apps: Smart Reminders or Triggers for Surveys and EMI:

Location-based



Time-based



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

Behaviors, Coping Strategies, etc.

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

Ohmage MWF All Surveys

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

- Yes
- No
- Refuse to answer

Previous Next

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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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Ohmage MWF All Surveys

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

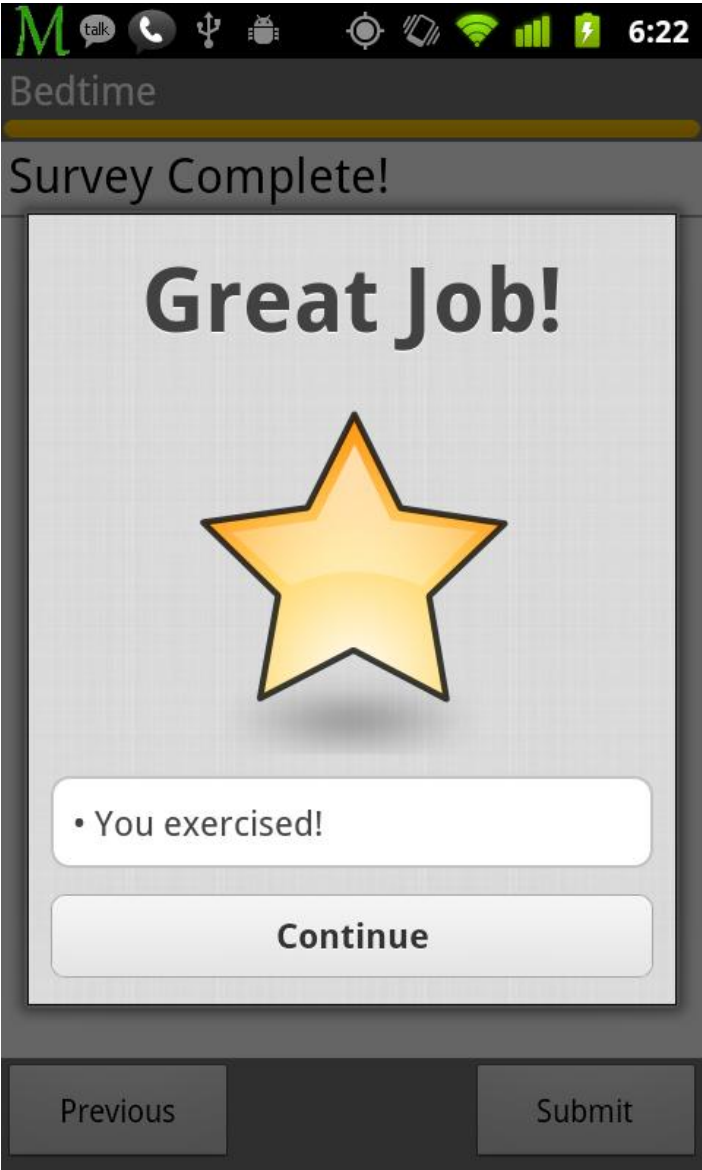
- HIV positive (partner told me)
- HIV positive (I think or guess)
- HIV negative (partner told me)
- HIV negative (I think or guess)
- I don't know
- Refuse to answer

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

Feedback to Patients/Clients, even Providers



Ohmage suite of tools

A:4

H. Tangmunarunkit et al.

Web-based Data Management and Administration



ohmage Web
FrontEnd



Project
Authoring



Survey
Gathering



Customized
Tools

Web-based Data Visualization and Analysis



ohmage
Explore Data



Interactive
Dashboards



LifeStreams



Passive Data
Visualization

ohmage Backend

(Web APIs for access-controlled data storage, management, and visualization)



ohmage



ohmage MWF



Trialist

Self-report Data Collection Apps



Mobility



AudioSens



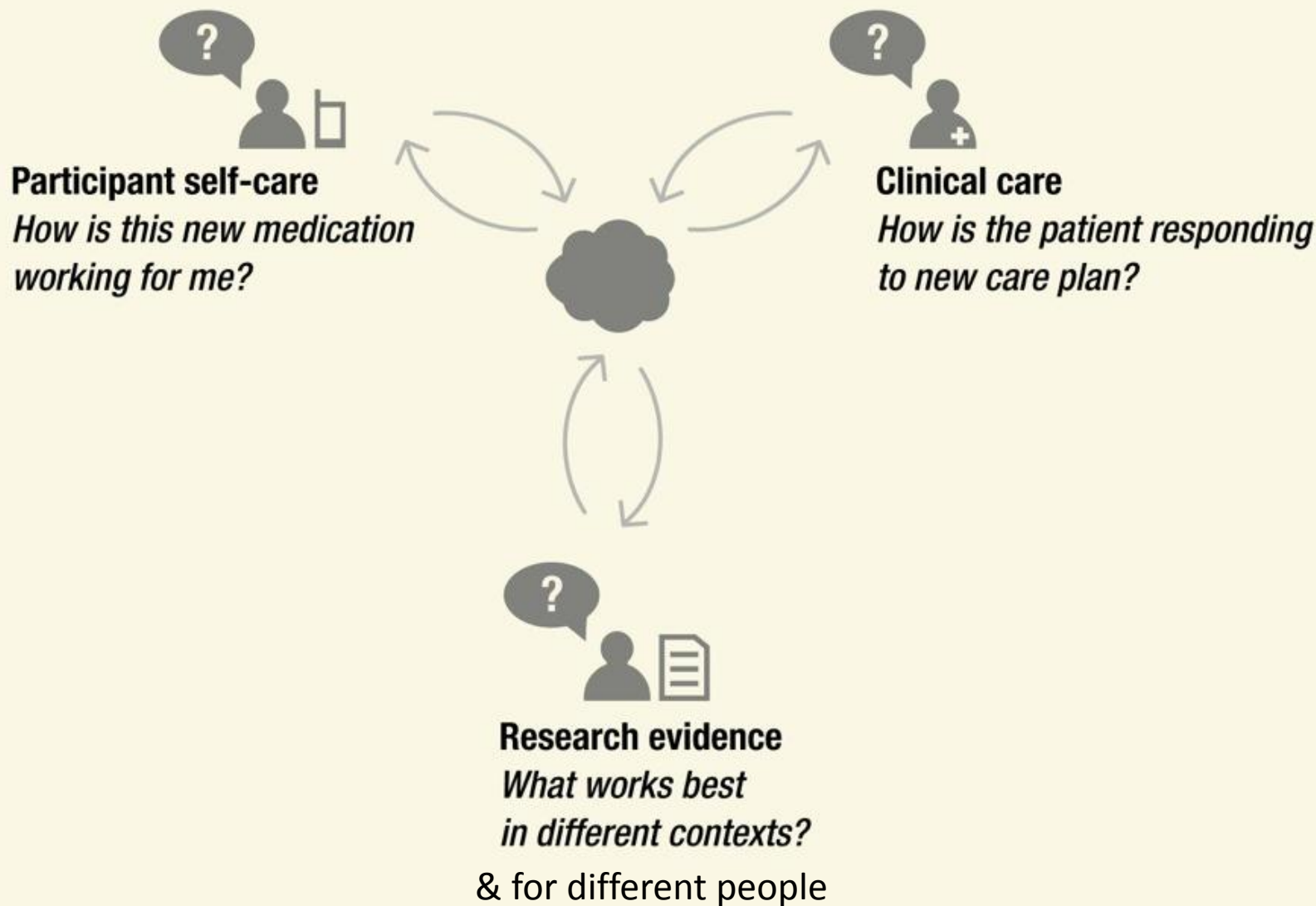
SystemSens

Passive Data Collection Apps

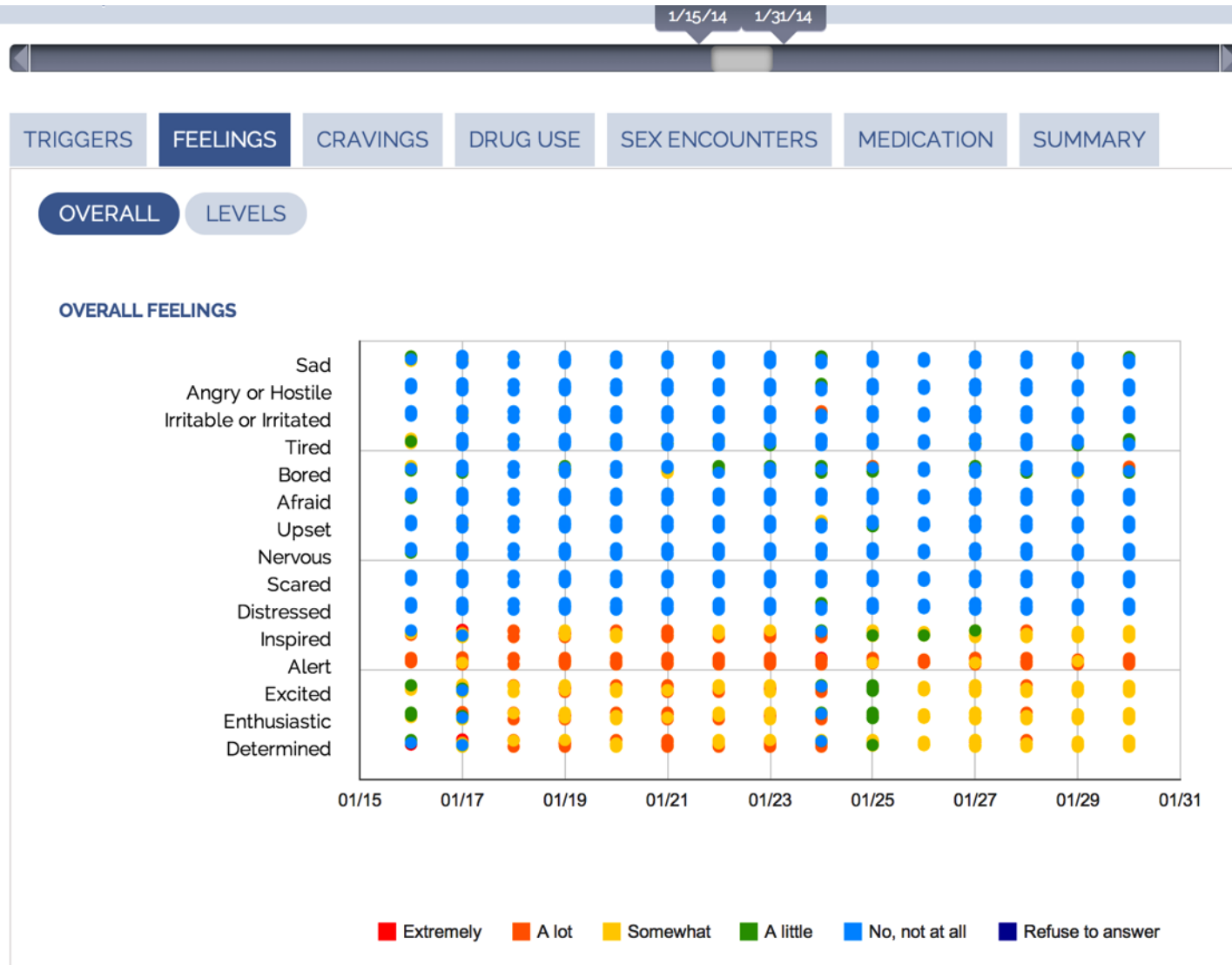
Mobile Data Collection Apps

Fig. 1: Ohmage system architecture and its end-to-end PS software suite.

Data driven feedback loops for patient-centered care

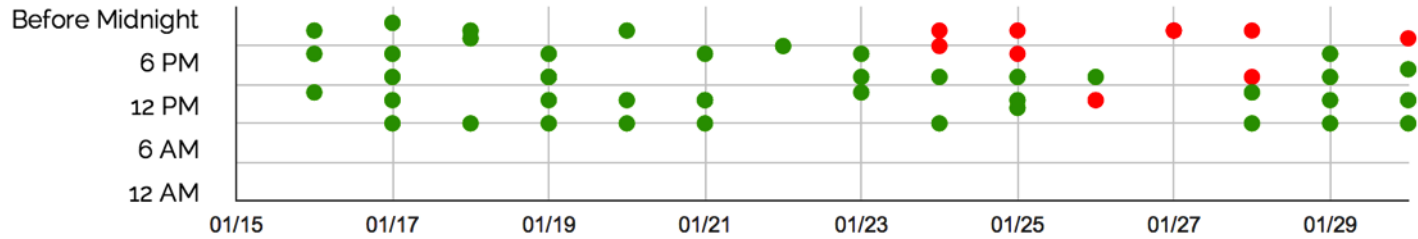


Dashboards for Providers & Patients

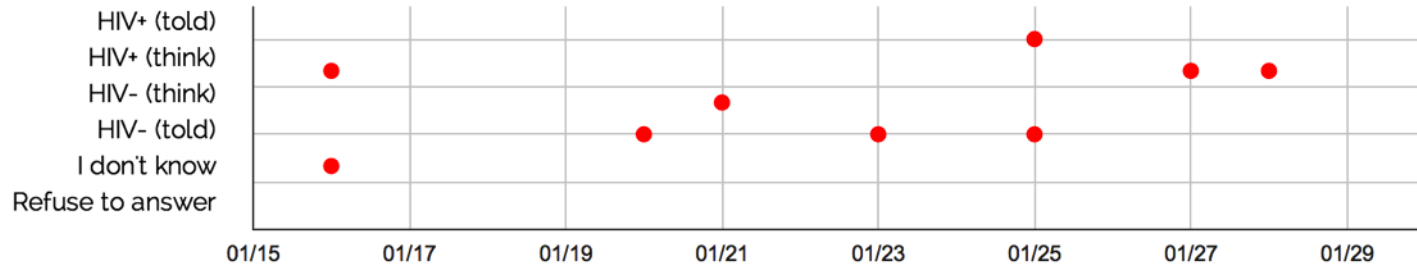


From APC 1 with Dr. Cathy Reback at Friends Research Institute:
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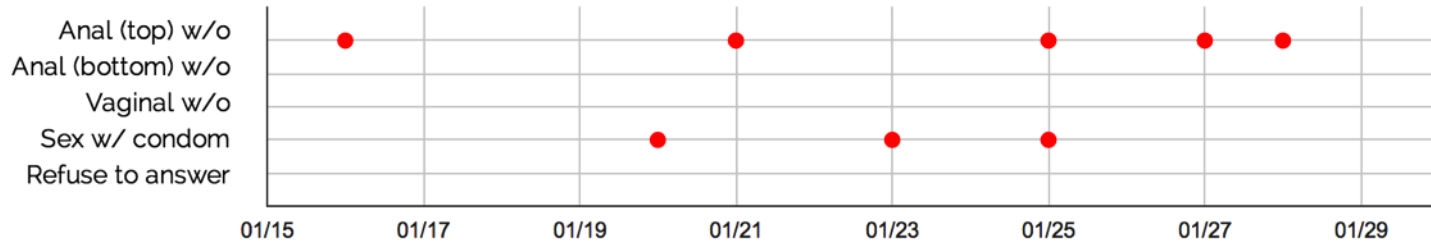
METH USE



SEX PARTNER HIV STATUS(ES)

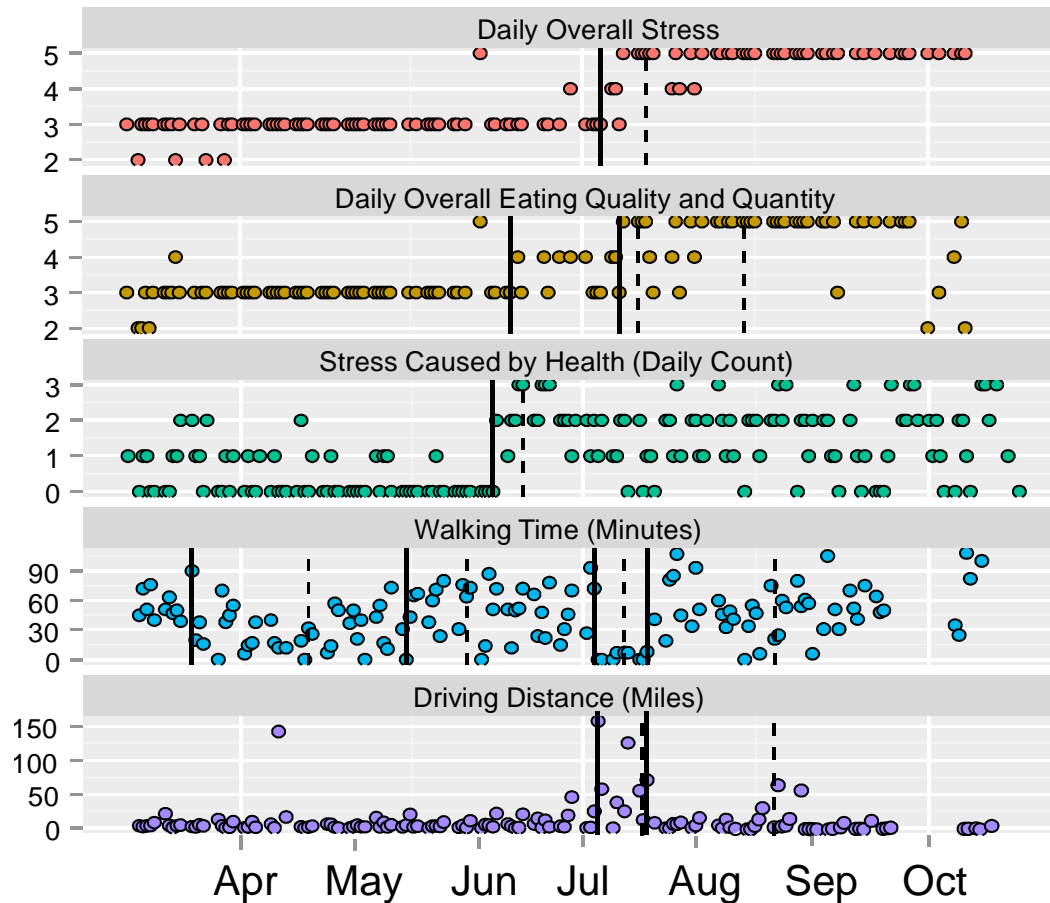


SEX ACTIVITIES AND CONDOMS



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

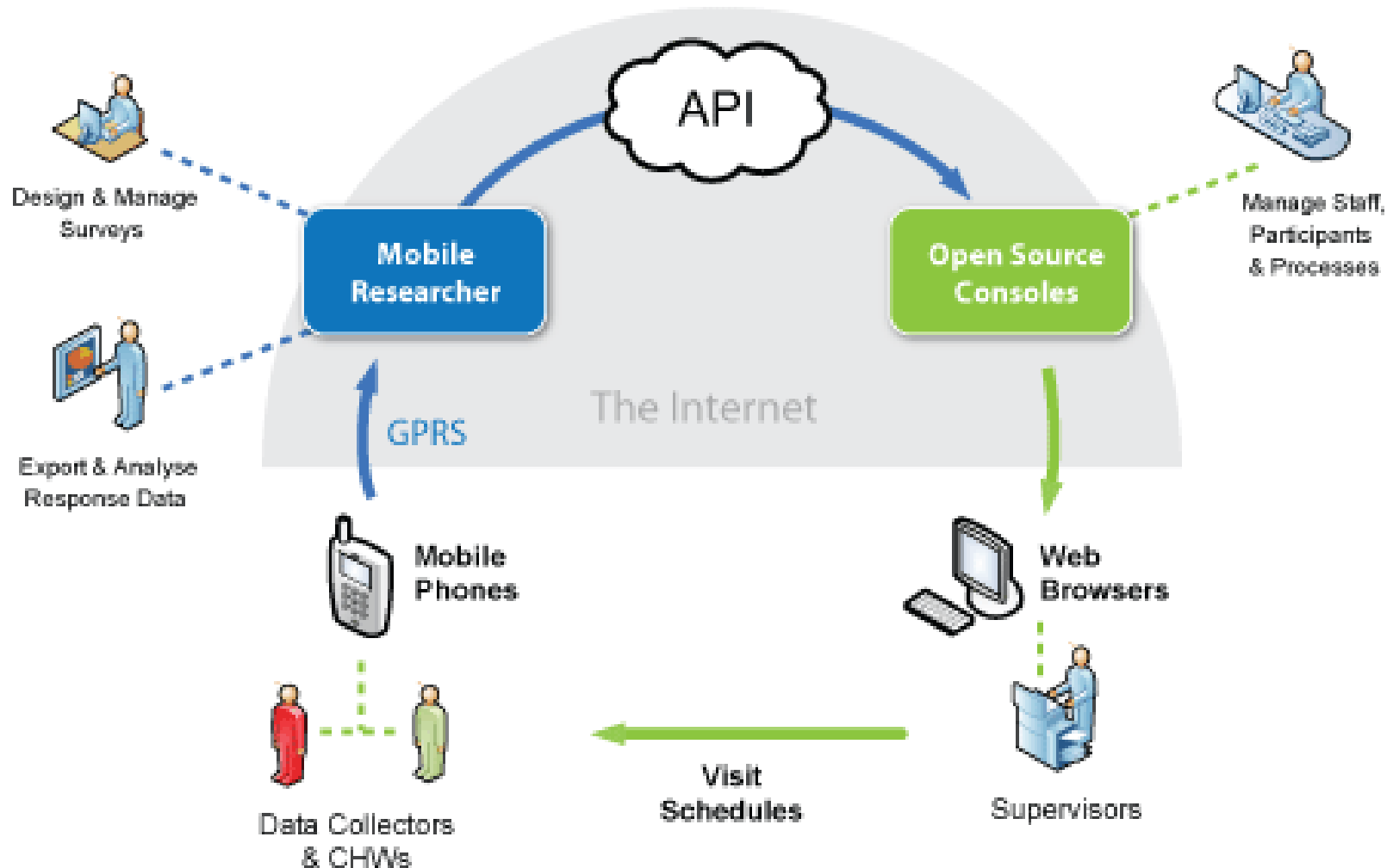
Life Streams – Pattern Change Detection



Lifestreams Dashboard: an interactive visualization platform for mHealth data exploration

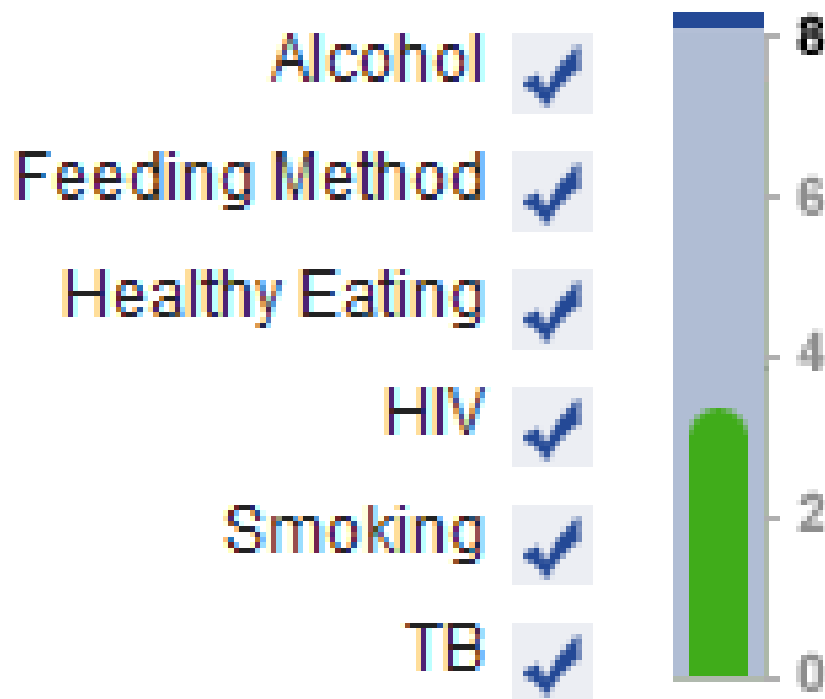
Cheng-Kang Hsieh, Hongsuda Tangmunarunkit, Faisal Alquaddoomi, John Jenkins, Jinha Kang, Cameron Ketcham, Brent Longstaff, Joshua Selsky, Dallas Swendeman, Deborah Estrin, Nithya Ramanathan
University of California, Los Angeles, USA

Care Coordination & Case Management

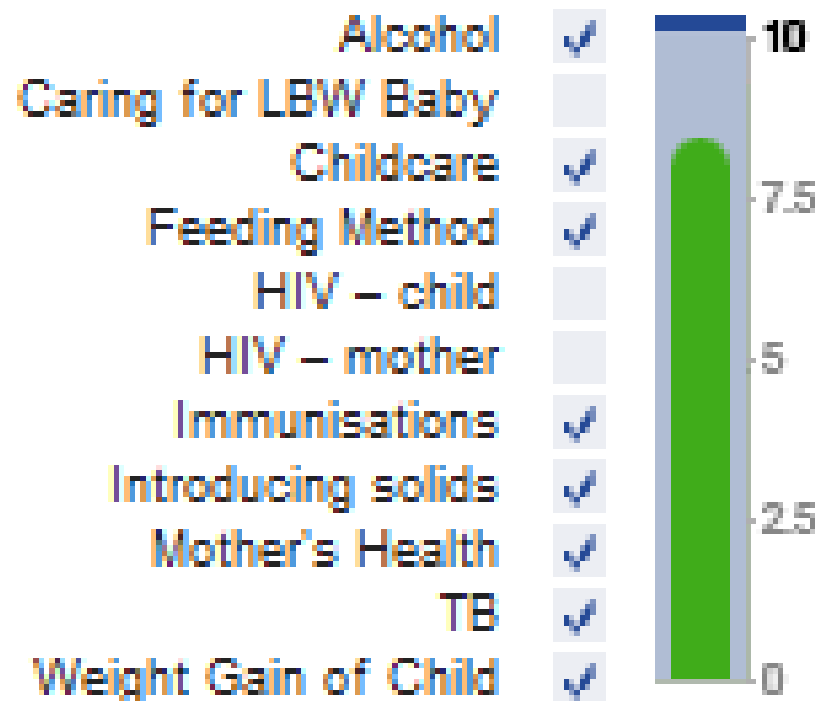


Fidelity Monitoring & Support for Intervention Deliverers (& Dose/Exp.)

Antenatal



Postnatal





L.A. Gay & Lesbian Center

UCLA

AIDS Institute

Center for AIDS Research

Thank you

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<http://chipts.ucla.edu/>;