Using Text Messaging to Reduce Methamphetamine Use and Sexual Risk Behaviors, and Increase ART Adherence among MSM

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Presented at Innovative Use of Technology for HIV Prevention and Care: Evidence, Challenges, and the Way Forward Conference, UCLA CHIPTS, Los Angeles, California, January 2014.

Acknowledgements

Steve Shoptaw, Ph.D.
Dallas Swendeman, Ph.D.
Deborah Ling Grant, M.B.A., M.P.H.
Jesse B. Fletcher, Ph.D.
Gordon Mansergh, Ph.D.

This work has been generously supported by:
CDC grant #UR6PS000312
and NIDA grant #1 R01 DA035092

Study 1:

CDC funded

Reducing Methamphetamine Use and HIV Sex-risk behaviors in Out-of-Treatment MSM

Lay title: Project Tech Support

2006 - 2009

Study Aims

- To conduct formative work to development of a real time, text messaging intervention for reducing methamphetamine use and high-risk sexual behaviors among out-of-treatment MSM;
- To assess the feasibility and utility of the intervention with the target population;
- Implement the two-week text messaging intervention to transmit real-time electronic correspondence;
- The aims of the two-week intervention were to:
  - impact upon at least one methamphetamine-using episode;
  - impact upon at least one sexual episode; and
  - provide culturally appropriate referral(s) for ongoing services

Eligibility

- Engaged in unprotected anal sex with a non-primary male partner in the previous 2 months;
- Used methamphetamine once in the previous 2 months;
- Not currently in or seeking drug treatment;
- NOT learned of his positive HIV serostatus for the first time in the previous 6 months;
- Between the ages of 18 and 65;
- A current resident of Los Angeles County;
- Does not have a plan to move away from Los Angeles County in the next 5 months.

Project Tech Support Flyer

400 Pre-written Messages Based on a Theoretical Background

- Each pre-written text message was framed within a theoretical perspective:
  - Social support theory
  - Health belief model
  - Social cognitive theory
- Text messages were based on participant's risk profile:
  - HIV status
  - Frequency of methamphetamine use
  - Method of administration
  - Meth/sex location
  - Sexual positioning
  - Stages of change regarding methamphetamine use

Texting Hours

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
3:30 pm - 12:00 am	12:00 pm - 8:00 pm	12:00 pm - 8:00 pm	12:00 pm - 1:00 am	12:00 pm - 1:00 am	12:00 pm - 2:00 am	3:30 pm - 2:00 am

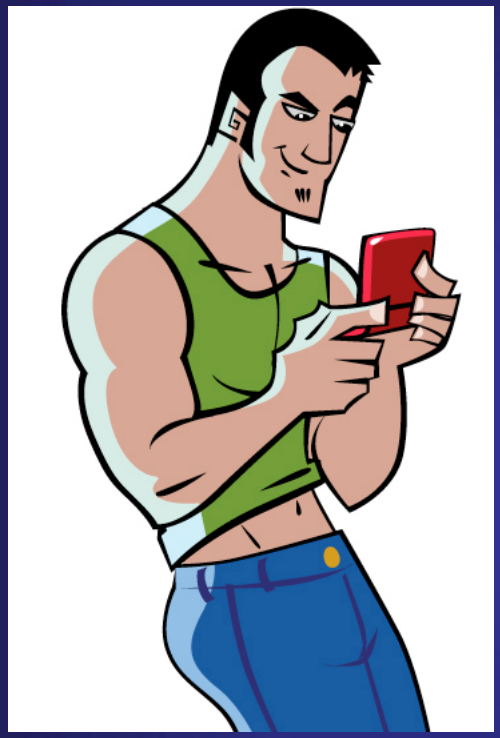
Sample Text Messages

Social Support	Informational Support	"Did he give you a bug? Here's where to go."
		"Take care of your body, get vaccinated for hep A and B."
	Emotional Support	"Screw your partner, not your life."
		"You're worth a new needle."
	Instrumental Support	"Meth brings you down, meds bring you up."
		"Pack your socks with condoms and lube."
Health Belief	Health Threat	"Is that precum or do you have a STD drip?"
		"Meth can take your teeth."
	Health Behaviors to Reduce Risk	"Dip it, don't stick it."
		"Inject clean, an abscess is a hot mess."
	Awareness of Health Risks	"50% of men with Chlamydia have no symptoms."
		"Using meth in public can be risky."
Social Cognition	Self-regulation Skills	"Weekends getting longer and longer?"
		"Don't have an open sores relationship."
	Self-Efficacy	"Say 1st thing your poz, like you did last time. You can do it."
		"You can take your meds, even when you party."

Pre-programmed Referral List

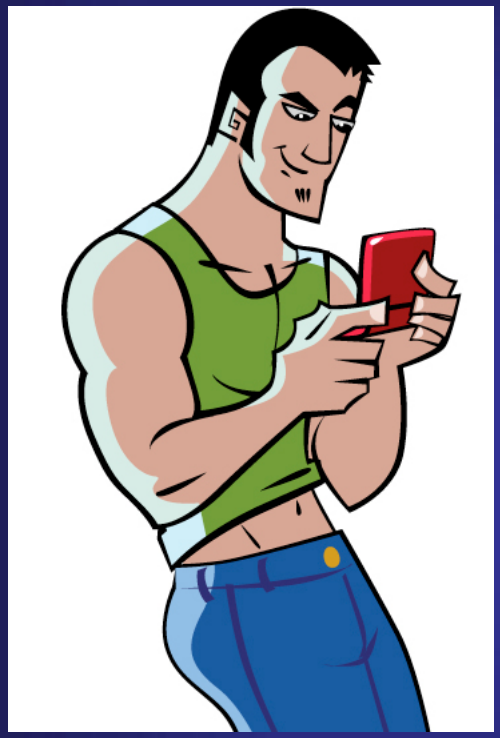
Sample Text-message Conversations…

I want
sex bad



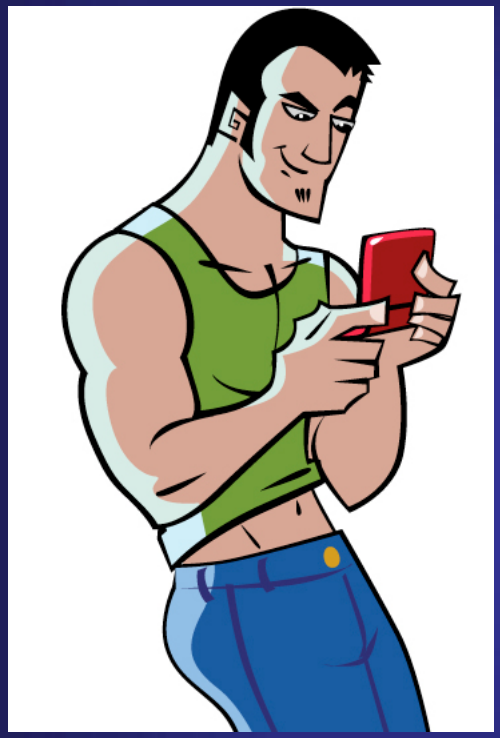
U can get it & keep it safe

How do I tell him?

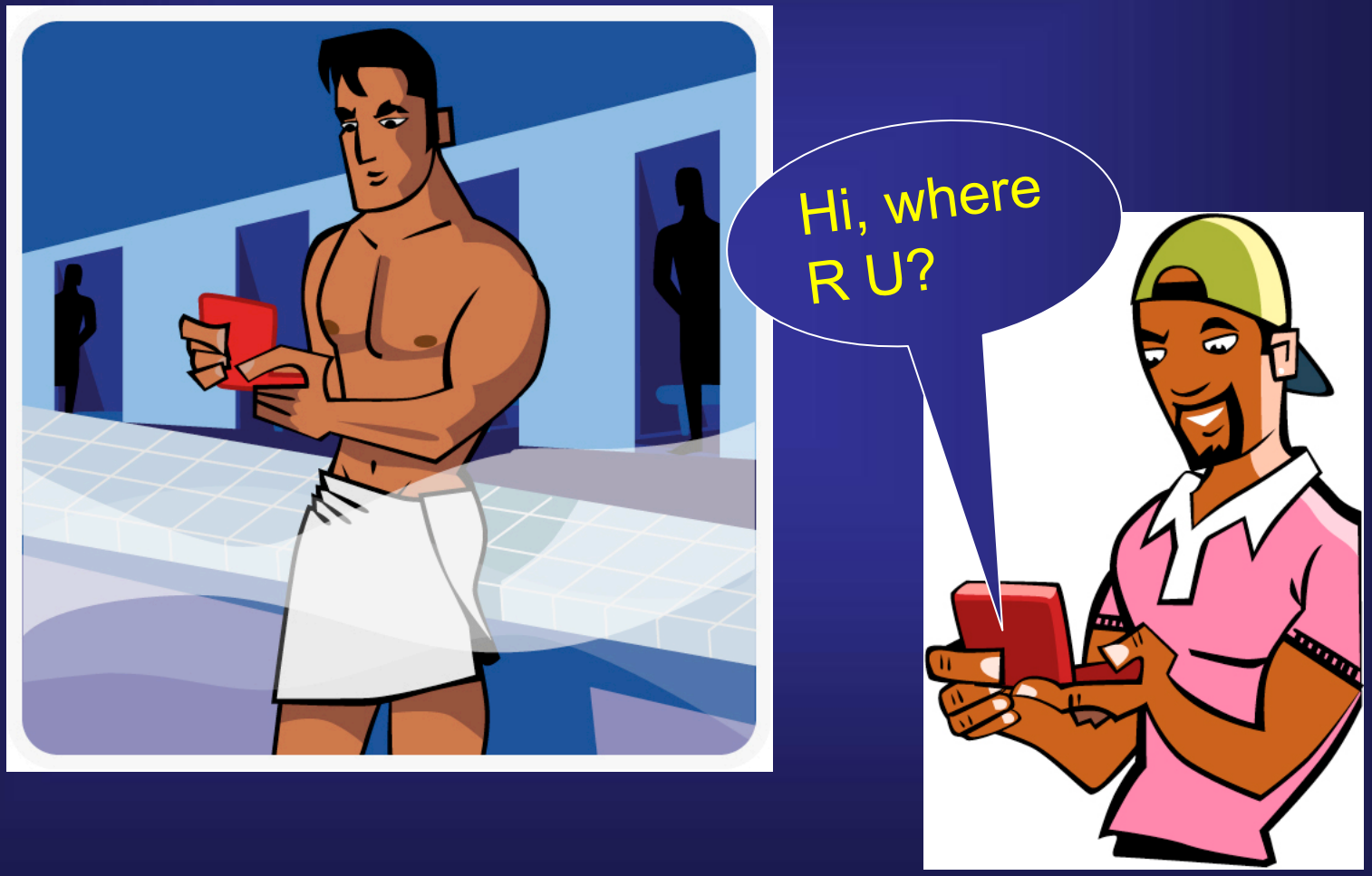


Have a condom ready

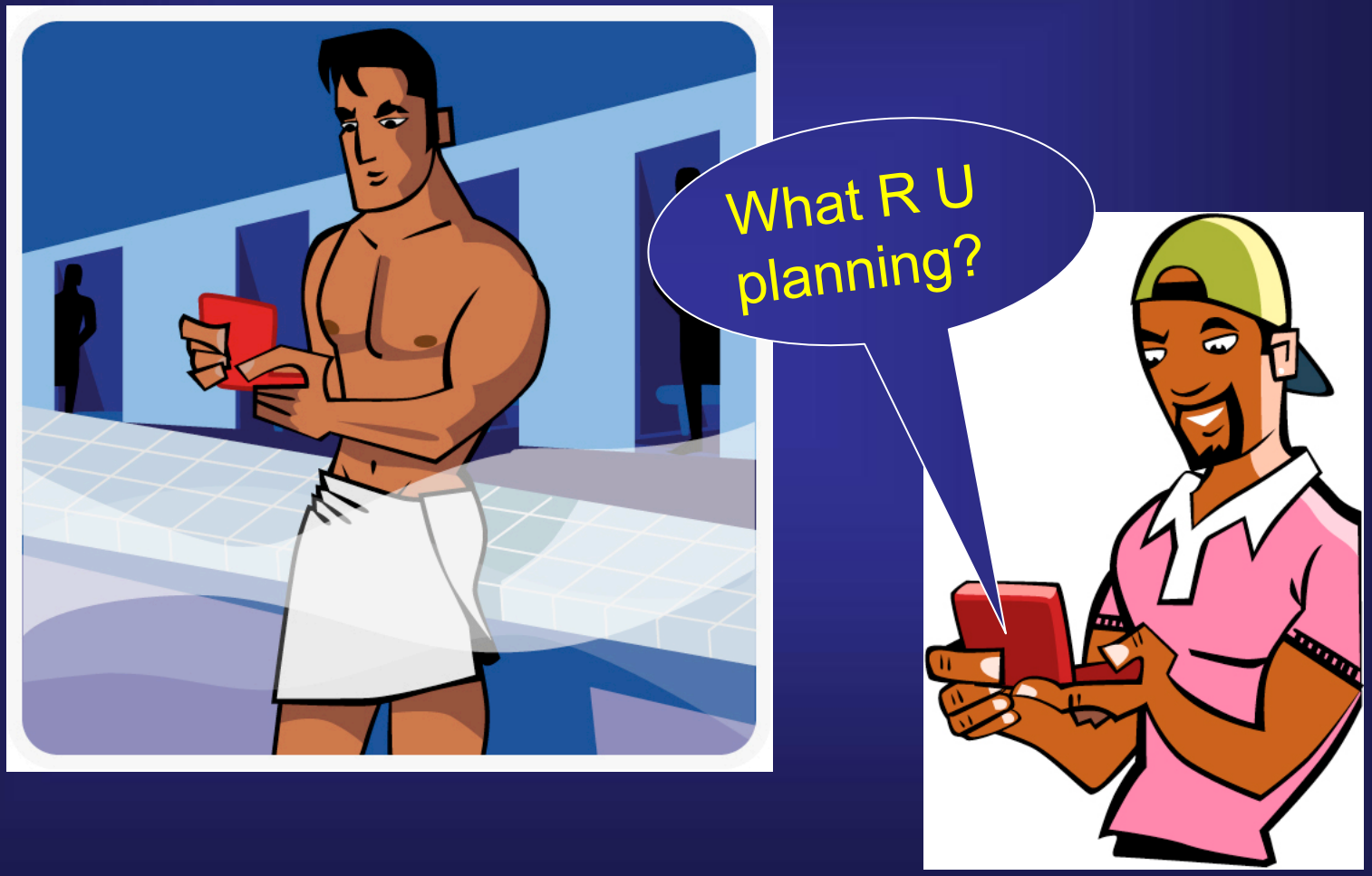
What if he says no?



Is he worth it? There's always another guy


Hi, where
R U?

I'm at the bathhouse just met a hot guy


What R U planning?

Gonna top him raw, that's safe right?

No, still risky 4 HIV and STIs

How's the hunt?

Lot a guys
wanna
PNP 2nite

U can find guys who don’t

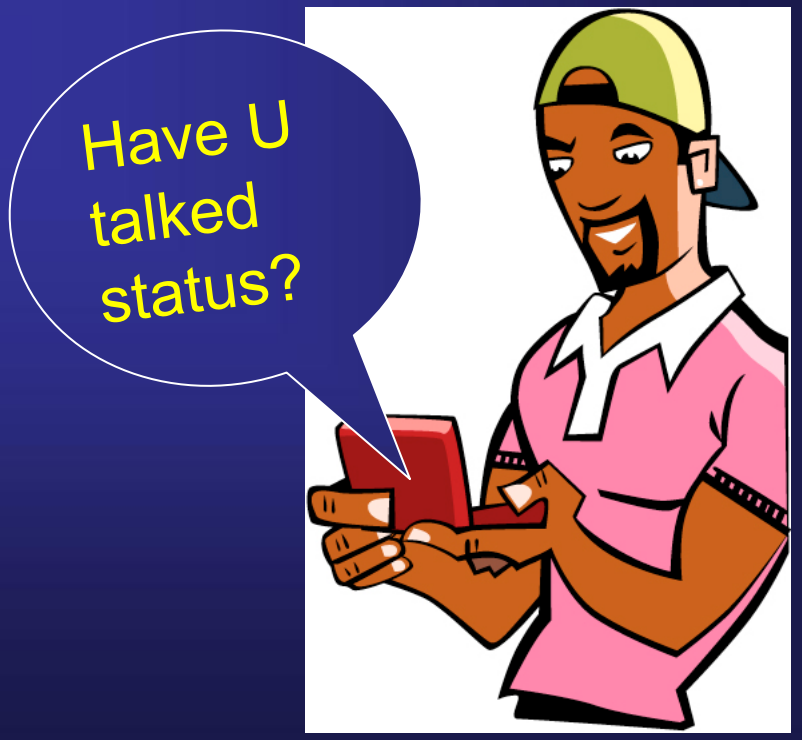
But not as much fun

Peace of
mind is
hot, 2

Yeah, I'm worth it

Hi, how's
ur nite?

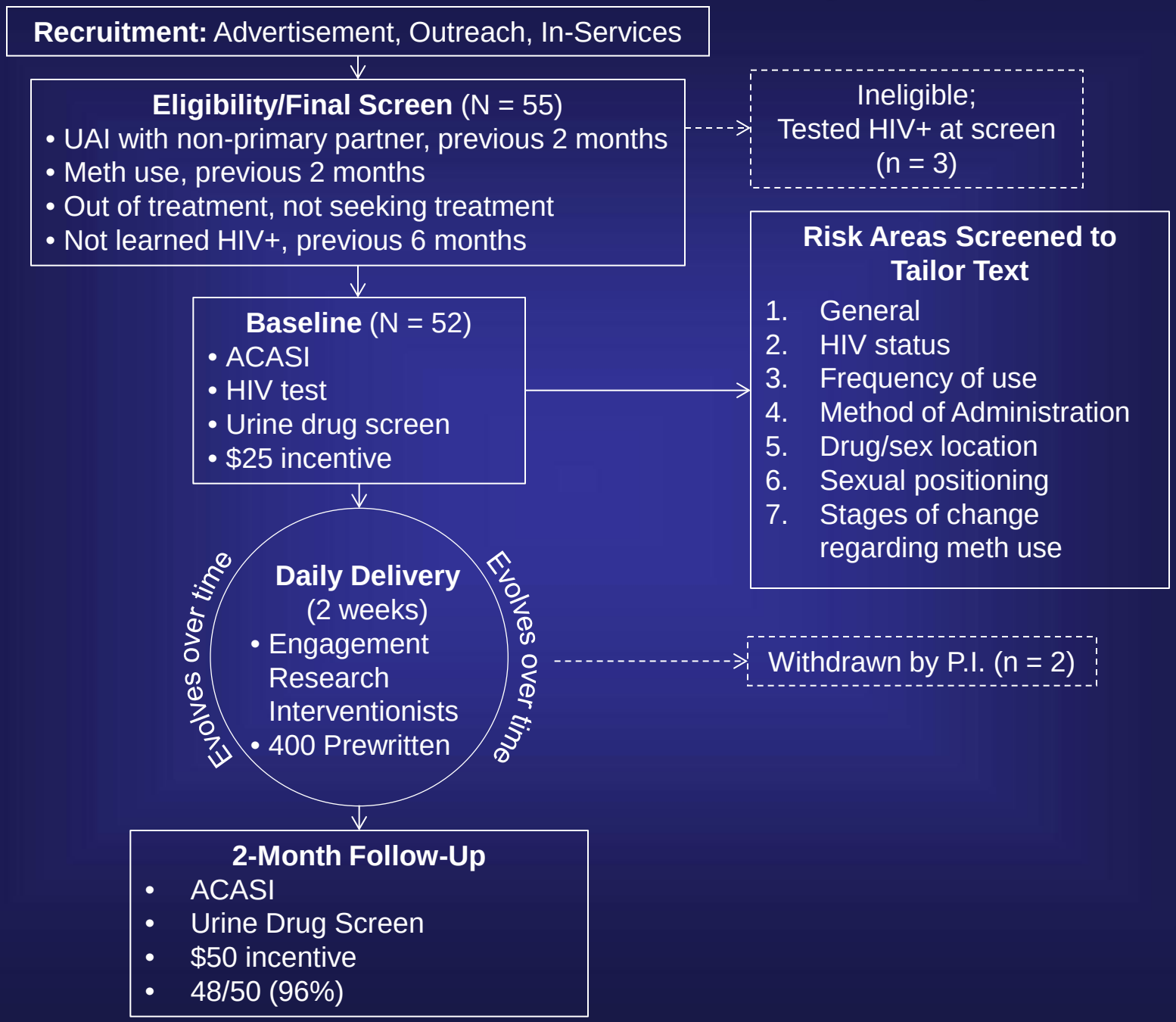
G8, ran in2 old f-buddy, gonna hook up


Have U talked status?

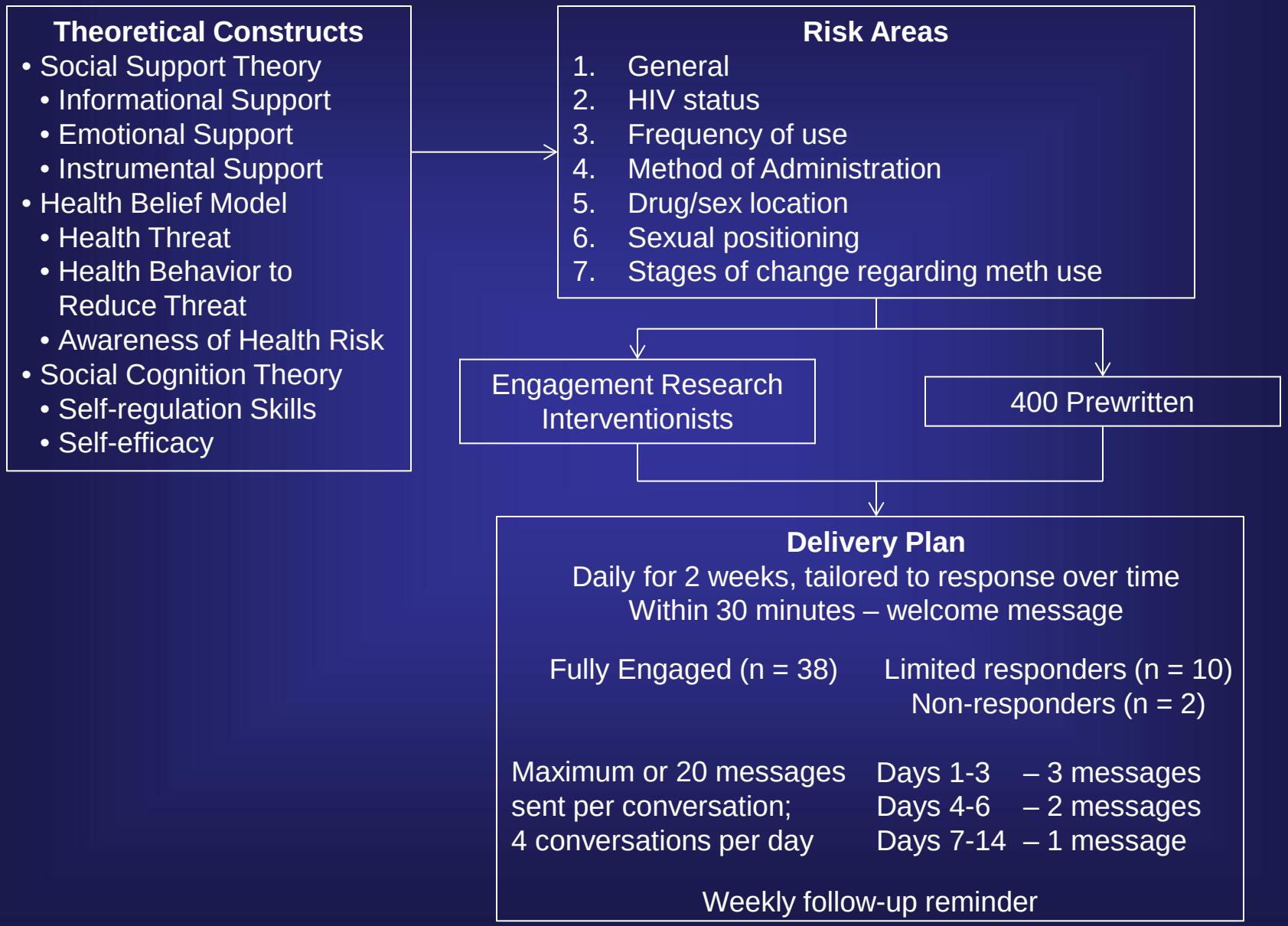
No, that'll end it

If ur safe
U don't
need to
know

Overview of Design and Study Progress



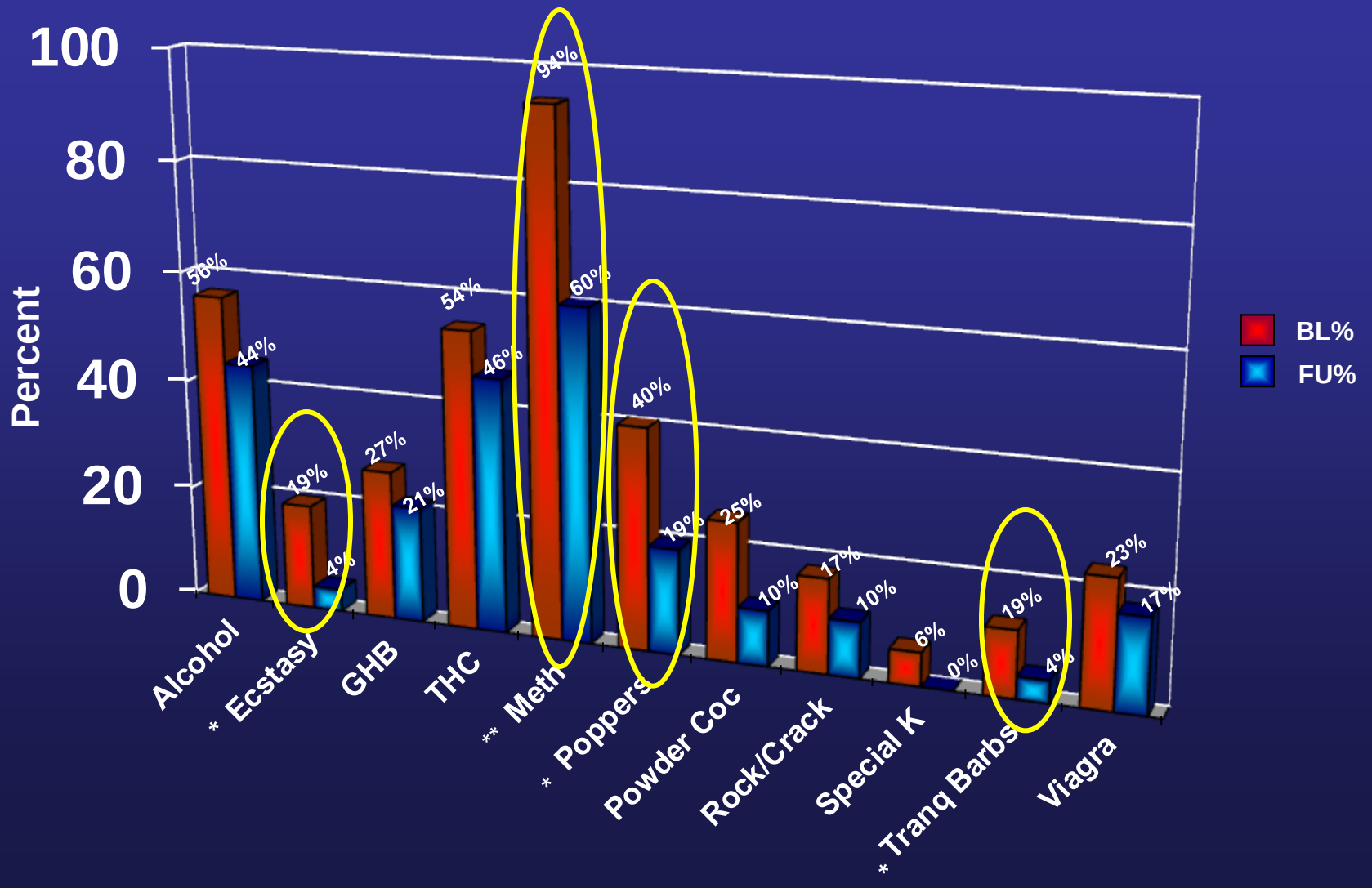
Text Messaging System



Demographic/Sociodemographic Characteristics

Variable	Category	N	%
Race/Ethnicity	Hispanic/Latino	20	38.5
	Caucasian/white	18	34.6
	African American/black	11	21.1
	Other/Multiethnic	3	5.8
HIV Status	HIV+	31	59.6
	HIV-	21	40.4
Age	Mean (SD)	36.5 yrs (SD=8.86)	
	Range	22 to 61 years	
Employment Status	Full time	3	5.8
	Part time	11	21.1
	Unemployed	38	73.1
Educational Attainment	< High School	7	13.5
	H.S./GED/some college	13	25.0
	> High School	32	61.5
Homeless, past 12 mo.	Yes	15	28.9

Alcohol and Drug Use, Previous 2 Months



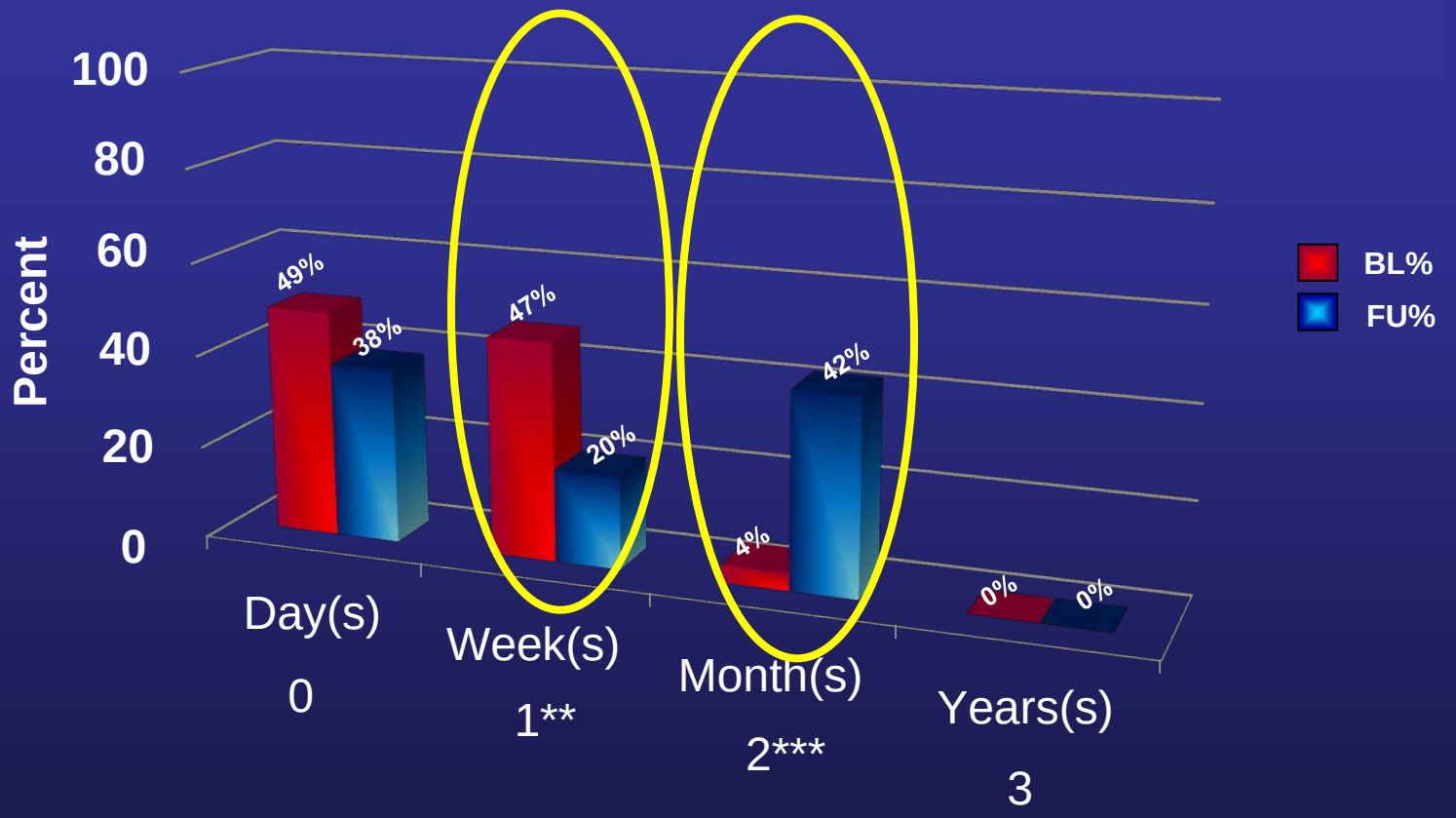
* p < .05; ** p < .01; *** p < .001

Methamphetamine Use Behaviors

	Baseline N	Baseline %	Follow-up N	Follow-up %	Sig.
Injected Methamphetamine in Previous 2 Months (N = 48)	10	20.8%	4	8.3%	*
Stopped Having Unprotected Sex while on Methamphetamine (N = 43)	9	20.9%	19	44.2%	**
Stopped Using Methamphetamine (N = 45)	6	13.3%	22	48.9%	***

* $p < .05$; ** $p < .01$; *** $p < .001$

Length of Time Since Last Used Methamphetamine



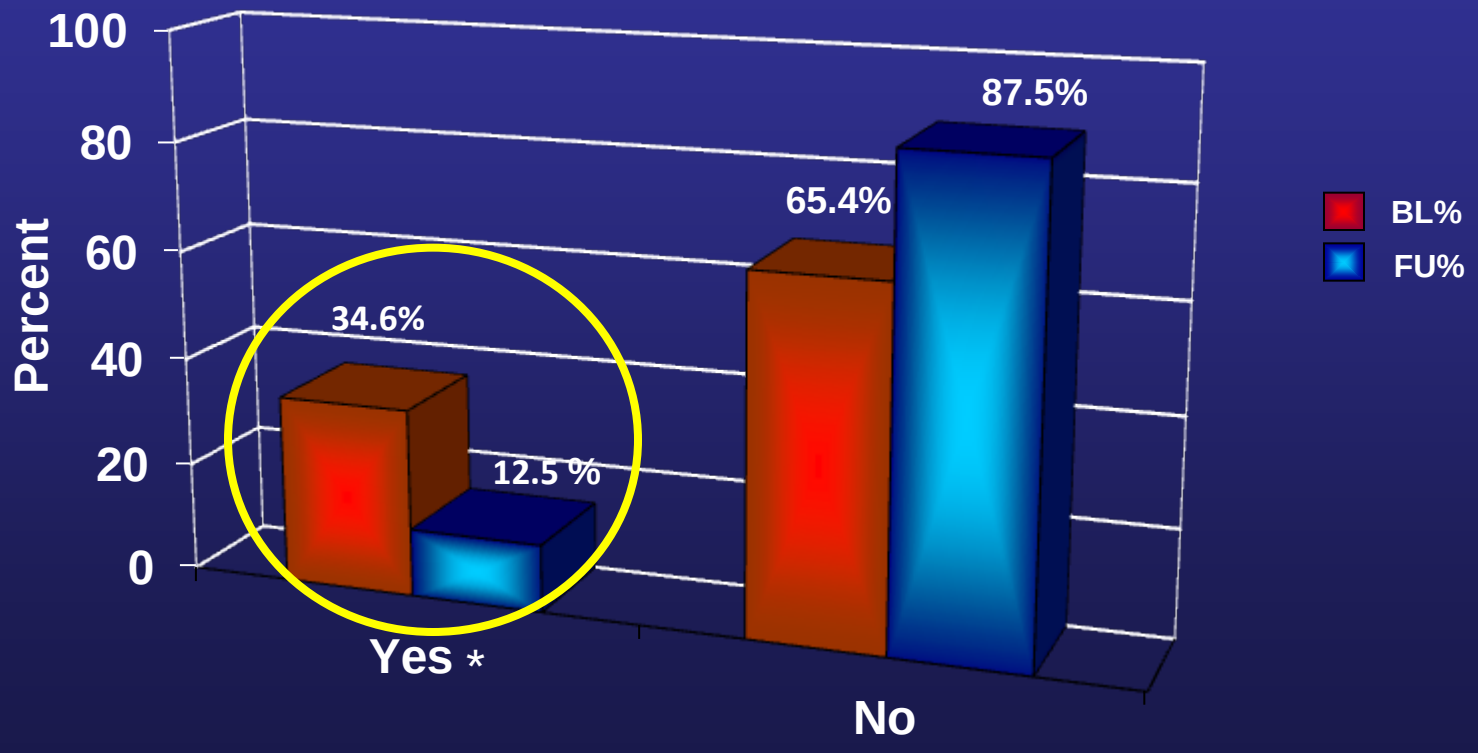
Omnibus T-Test
Mean at Baseline = 0.6 (0.58)
Mean at Follow-Up = 1.04 (0.9)
Mean Diff = 0.44**
* p < .05; ** p < .01; *** p < .001

Any Anal Intercourse (top or bottom), Previous 2 Months

	Baseline	Follow-Up
# Male Partners		
Range	1 to 55	0 to 40
Mean (SD)	8.4 men (10.3)	3.6 men (7.8)**

* p < .05; ** p < .01; *** p < .001

Exchange Sex in the Previous 2 Months



* p < .05; ** p < .01; *** p < .001

Unprotected Sex with Primary and Non-Primary Partners

Primary Partners (N = 38)	Baseline Mean (SD)	Follow-Up Mean (SD)	Sig.
# of Times as "Top"	2.61 (7.18)	1.18 (3.68)	†
… while on Alcohol	1.63 (5.91)	.66 (2.13)	-
… while on Drugs	2.42 (7.02)	.97 (3.06)	†
# of Times as "Bottom"	2.45 (8.05)	.92 (3.44)	-
… while on Alcohol	1.14 (3.74)	.62 (2.59)	-
… while on Drugs	1.54 (4.43)	.65 (2.55)	†

Non-Primary Partners (N = 48)	Baseline Mean (SD)	Follow-Up Mean (SD)	Sig.
# of Times as "Top"	3.98 (6.26)	1.98 (4.03)	**
… while on Alcohol	2.04 (4.49)	.72 (2.03)	*
… while on Drugs	3.4 (5.14)	1.64 (3.6)	**
# of Times as "Bottom"	5.38 (11.35)	1.21 (2.41)	*
… while on Alcohol	2.4 (4.95)	.58 (1.74)	**
… while on Drugs	4.1 (6.84)	1 (2.31)	**

† $p < .1$; * $p < .05$; ** $p < .01$; *** $p < .001$

Conclusions

- The use of text messaging intervention for methamphetamine-using MSM appears to be feasible and acceptable as a HIV prevention strategy.
- Significant reductions in methamphetamine (and other drug) use, frequency of use, and high-risk behaviors:
  - Significant reductions in injection use and use during sex, two very high-risk behaviors for HIV transmission.
- Significant increase in time interval between methamphetamine use.
- Significantly fewer high-risk sexual encounters as well as exchange partners:
  - Significant reductions in unprotected anal intercourse with non-primary partners
- Randomized controlled trial is needed to determine the efficacy, cost effectiveness, and sustainability of the intervention.

Study 2:

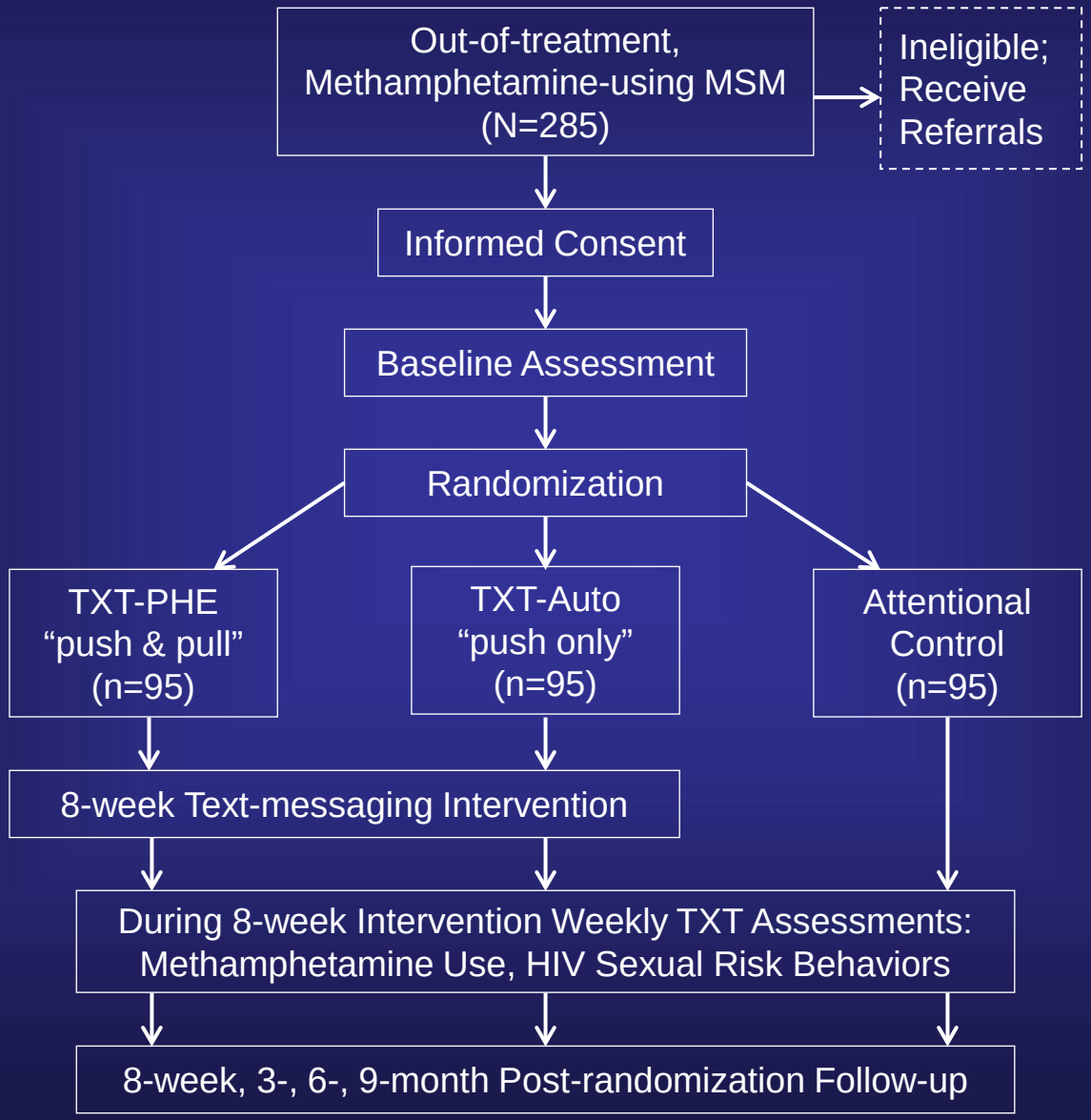
NIDA funded

Theory-based Text Messaging to Reduce Methamphetamine Use and HIV Risks among MSM

Lay title: Project Tech Support

2013 - 2017

Project Tech Support RCT Study Design



Study Aims

- Determine differential immediate and sustained effects of transmitting theory-based text messages by PHE (TXT-PHE) versus by automation (TXT-Auto), compared to an assessment-only (AO) control condition among out-of-treatment, methamphetamine-using MSM for reductions of methamphetamine use and HIV sexual risk behaviors;

- Determine the cost-effectiveness of TXT-PHE vs. TXT-Auto compared to AO for reducing methamphetamine use and HIV sexual risk behaviors;

- Estimate the main effects of each theoretical construct by testing associations between intervention outcomes and relative exposure to each theoretical construct; and,

- Determine the impact of TXT-PHE versus TXT-Auto as compared to AO to increase linkages/adherence to, and retention in, HIV primary care for HIV-positive participants.

Text Messaging Intervention
Arm A

- Each participant receives 5 messages/day
- Each participant receives 280 text messages during the 8 week intervention
  - 5 daily messages x 7 days/week x 8 weeks = 280 messages
- Of the 5 messages/day, participants receive 1 message/day/risk profile + general messages
  - 1 message/day/risk profile x 7 days/week x 8 weeks = 56 messages/risk profile
- Total of 616 pre-written text messages
  - 56 messages per risk profile X 6 risk profiles = 336 messages
  - 280 general meth/sex messages
  - 336 risk profile specific messages + 280 general messages = 616 total pre-written messages
- Same text-messaging intervention as pilot study
- Weekly brief text assessment

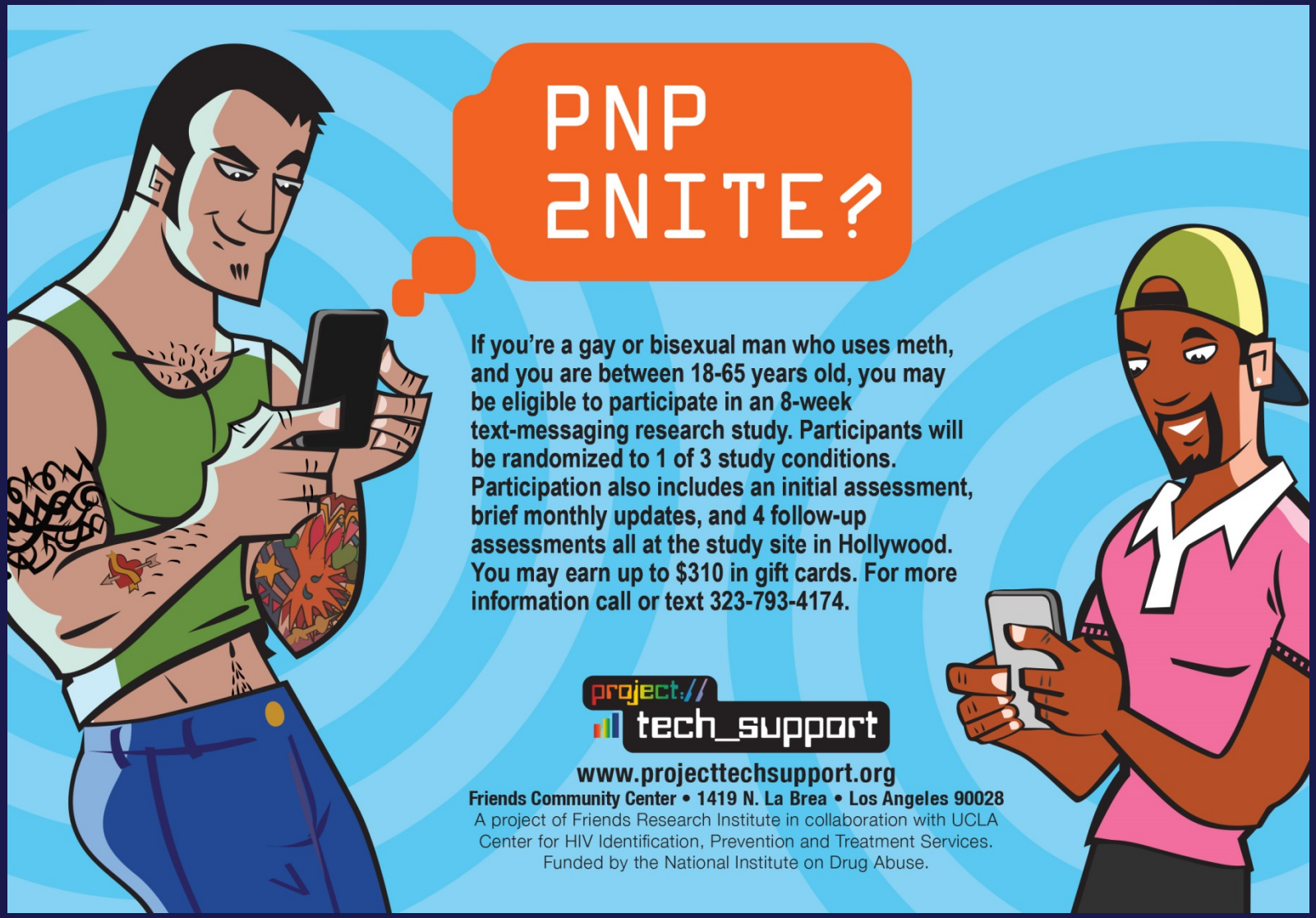
Text Messaging Intervention Arm B

- Each participant receives 5 messages/day
- Each participant receives 280 text messages during the 8 week intervention
  - 5 daily messages x 7 days/week x 8 weeks = 280 messages
- Of the 5 messages/day, participants receive 1 message/day/risk profile + general messages
  - 1 message/day/risk profile x 7 days/week x 8 weeks = 56 messages/risk profile
- Total of 616 pre-written text messages
  - 56 messages per risk profile X 6 risk profiles = 336 messages
  - 280 general meth/sex messages
  - 336 risk profile specific messages + 280 general messages = 616 total pre-written messages
- ~~Same text-messaging intervention as pilot study~~
- Weekly brief text assessment

Text Messaging Intervention Arm C

- ~~Each participant receives 5 messages/day~~
- ~~Each participant receives 280 text messages during the 8 week intervention~~
  - ~~5 daily messages x 7 days/week x 8 weeks = 280 messages~~
- ~~Of the 5 messages/day, participants receive 1 message/day/risk profile + general messages~~
  - ~~1 message/day/risk profile x 7 days/week x 8 weeks = 56 messages/risk profile~~
- ~~Total of 616 pre-written text messages~~
  - ~~56 messages per risk profile X 6 risk profiles = 336 messages~~
  - ~~280 general meth/sex messages~~
  - ~~336 risk profile specific messages + 280 general messages = 616 total pre-written messages~~
- ~~Same text-messaging intervention as pilot study~~
- Weekly brief text assessment

Slightly Modified Project Tech Support Flyer



Estimated enrollment to start mid-February 2014

Overall Summary

- Given the advances mHealth, it is no longer necessary to limit prevention or treatment intervention options to physical, brick-and-mortar sites.

- mHealth interventions are poised to capture the paradigm shift in behavioral health services delivery.

- mHealth interventions provide a prevention or treatment opportunity that is easily accessible, culturally competent, and private.

Thank you.

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