

The Role of Alcohol Behavioral Research in the Design of Secondary Prevention Interventions in the Era of ART: Agenda for the Next 5 Years

Paul A. Shuper, Ph.D.^{1,2,3,4}

December 13, 2017
Bethesda, MD, USA



¹Senior Scientist
Centre for Addiction and Mental Health
Toronto, Ontario, Canada



²Assistant Professor
Dalla Lana School of Public Health
University of Toronto; Toronto, Ontario, Canada



³Affiliate
Institute for Collaboration on Health, Intervention, and Policy
University of Connecticut; Storrs, CT, USA



⁴Associate Member of Staff
Alcohol, Tobacco and Other Drug Research Unit
South African Medical Research Council
Pretoria, South Africa

Current Funding

- NIAAA/NIH
- Canadian Institutes of Health Research (CIHR)
- Ontario HIV Treatment Network (OHTN)
- South African Medical Research Council (MRC)



Outline

- **Importance of secondary HIV prevention**
- **What do we know about alcohol's role in secondary prevention?**
 - Condomless sex
 - HIV treatment cascade
- **Addressing alcohol in the context of secondary prevention: Where do we go from here?**
 - Condomless sex
 - HIV treatment cascade
 - Additional considerations

Importance of Secondary Prevention of HIV

Importance of Secondary Prevention of HIV

- What is “secondary prevention” of HIV?
 - Targeting PLWH
 - Sexual risk behaviors
 - HIV treatment
 - Why focus on PLWH?
 - Role in transmission
 - HIV prevalence on the rise
 - Marked gaps in the cascade



What Do We Know about Alcohol's Role in Secondary Prevention?

- Condomless Sex -

Alcohol and Sexual Risk Behavior among PLWH: Meta-Analyses

AIDS Behav (2009) 13:1021–1036
DOI 10.1007/s10461-009-9589-z

ORIGINAL PAPER

Alcohol as a Correlate of Unprotected Sexual Behavior Among People Living with HIV/AIDS: Review and Meta-Analysis

Paul A. Shuper · Narges Joharchi · Hyacinth Irving · Jürgen Rehm

Curr HIV/AIDS Rep (2013) 10:314–323
DOI 10.1007/s11904-013-0177-5

BEHAVIORAL ASPECTS OF HIV MANAGEMENT (RJ DICLEMENTE AND JL BROWN, SECTION EDITORS)

Alcohol Use and Sexual Risk Behaviors among Individuals Infected with HIV: A Systematic Review and Meta-Analysis 2012 to Early 2013

Lori A. J. Scott-Sheldon · Paige Walstrom · Kate B. Carey · Blair T. Johnson · Michael P. Carey · the MASH Research Team

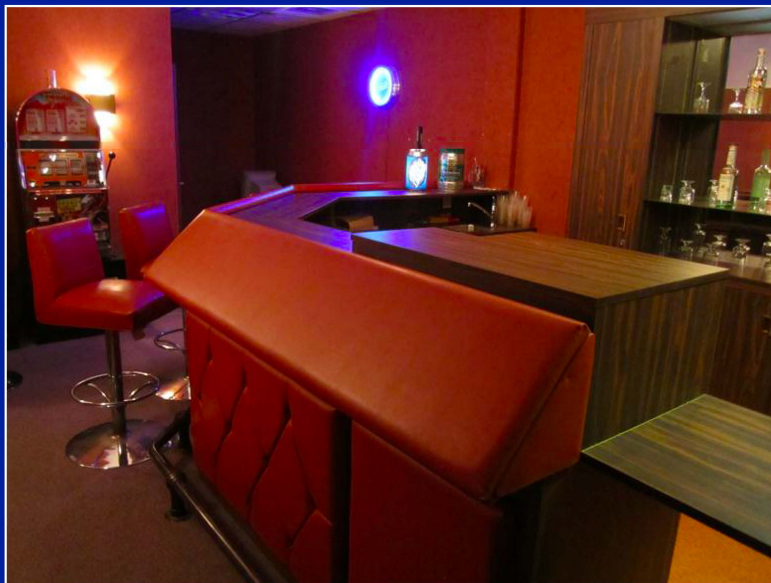
Arch Sex Behav
DOI 10.1007/s10508-017-1050-1

ORIGINAL PAPER

Meta-Analysis of Alcohol and Serodiscordant Condomless Sex Among People Living with HIV

Sarahmona M. Przybyla¹ · Gabriela Krawiec¹ · Stephanie A. Godleski² · Cory A. Crane³

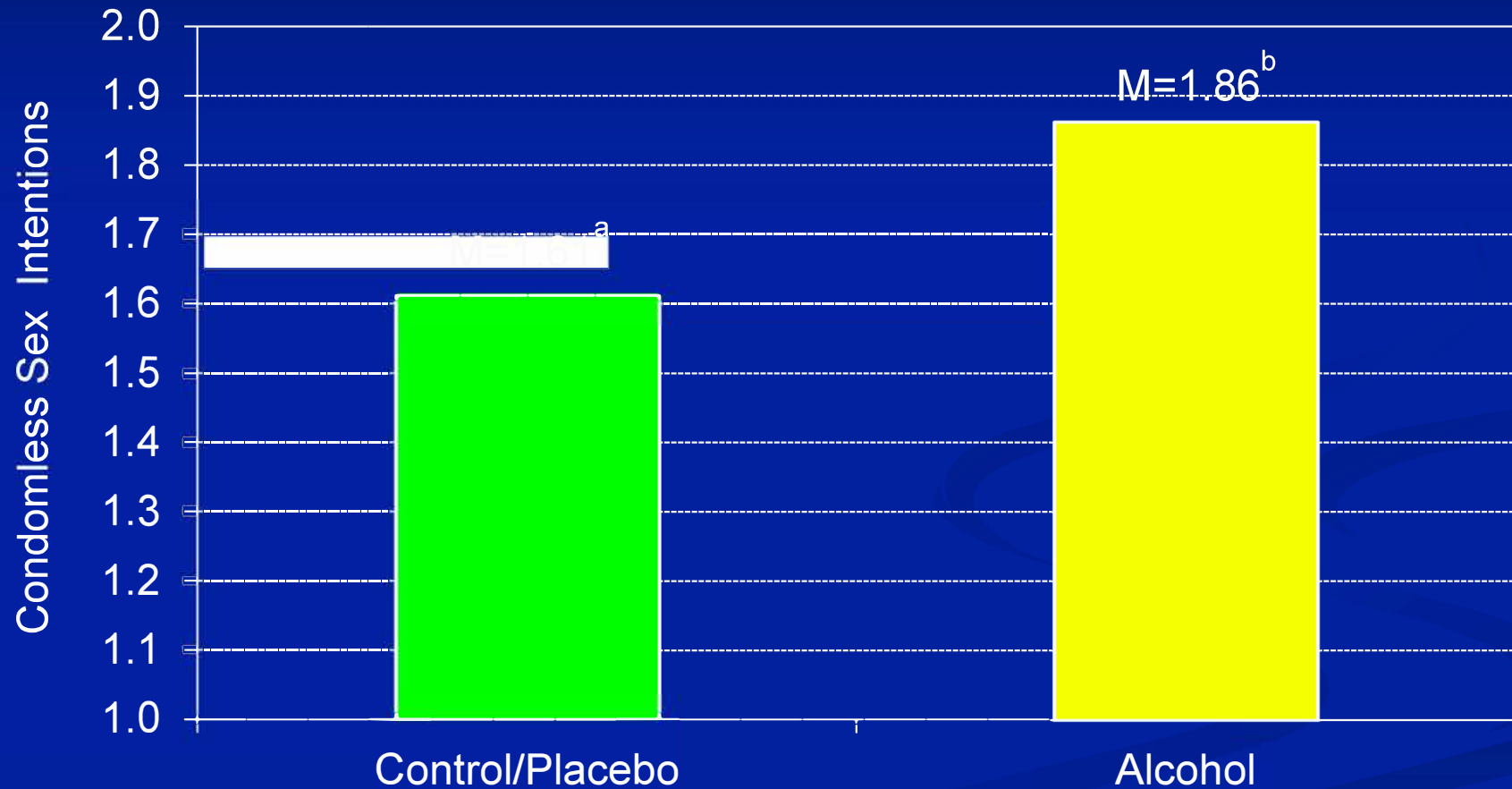
Alcohol's CAUSAL Role in Condomless Sex



Hypothetical Scenarios
Condomless Sex
Intentions

Shuper et al., AIDS and Behavior (2016)
Shuper et al., JAIDS (2017)

Alcohol's CAUSAL Role in Condomless Sex



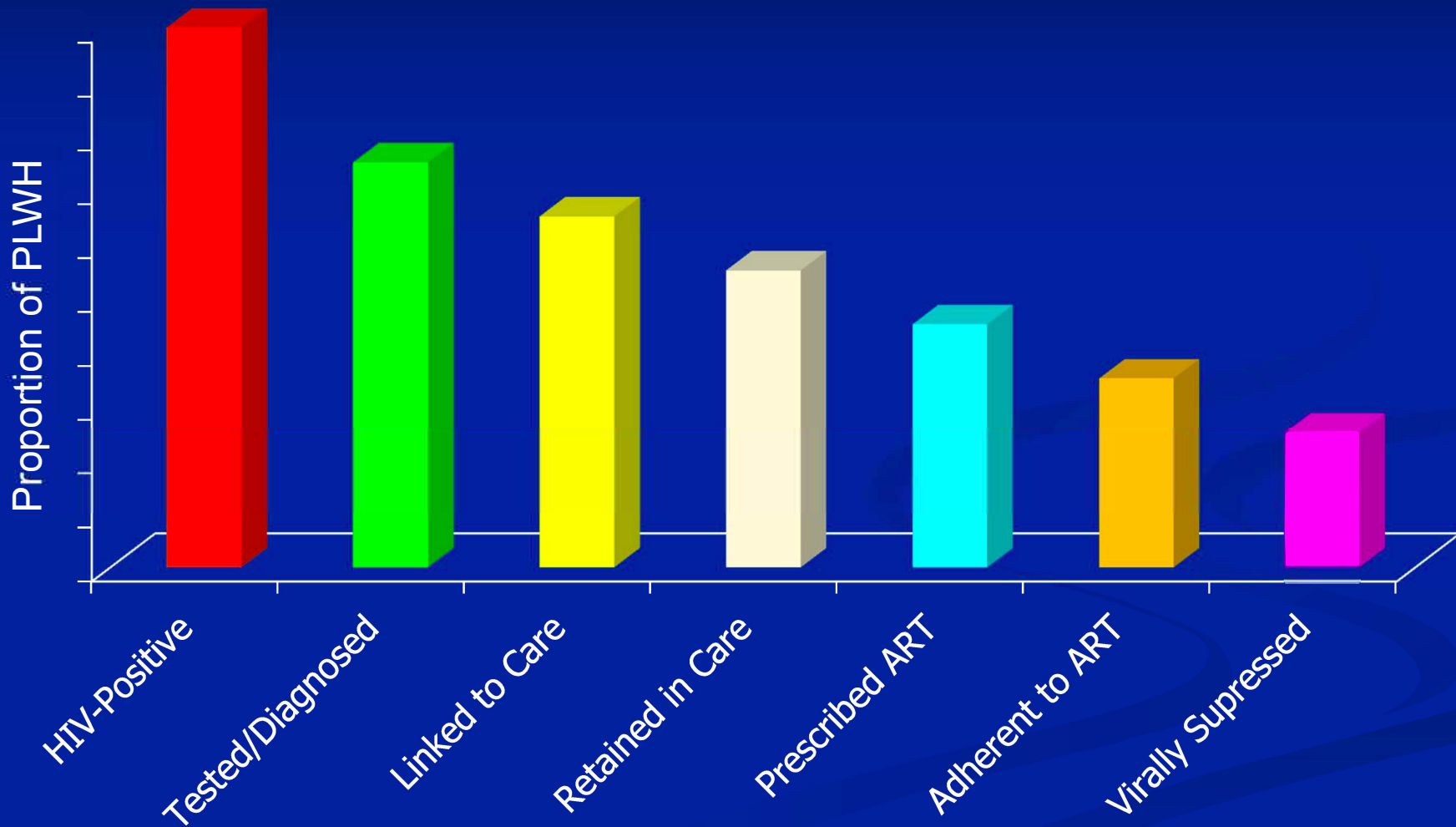
$F(1, 274)=9.43, p=.002$

Shuper et al., JAIDS (2017)

What Do We Know about Alcohol's Role in Secondary Prevention?

- HIV Treatment Cascade -

HIV Treatment Cascade



See Reviews from Azar et al. (2010) and Vagenas et al. (2015)

HIV Treatment Cascade: HIV Testing

- **Walter, Lundgren, Umez-Eronini, & Ritter, 2016**
 - 2009 US National Health Interview Survey
 - 15,470 women
 - Results: Ever tested for HIV
 - Moderate drinkers
 - (OR=.543, CI=.320-.920)
 - Heavy drinkers
 - (OR=.168, CI=.087-.326)



HIV Treatment Cascade: Retention in Care

- Monroe, Lau, Mugavero, et al., 2016
 - 9,694 PLWH from 7 US sites
 - Retention: IOM – 2 visits in 1 year, ≥ 90 days apart

	IOM Retention Measure		Visit Adherence Measure	
	Drinking Categories	Binge Frequency Categories	Drinking Categories	Binge Frequency Categories
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Drinking category				
Never	Ref	Ref	Ref	Ref
Moderate	0.93 (0.83 to 1.03)	—	1.01 (0.96 to 1.07)	—
Heavy†	0.78 (0.69 to 0.88)‡	—	0.97 (0.91 to 1.04)	—
Binge frequency category				
Never	Ref	Ref	Ref	Ref
Monthly/less than monthly	—	0.89 (0.80 to 0.99)§	—	0.98 (0.93 to 1.03)
Daily/weekly	—	0.90 (0.74 to 1.10)	—	0.90 (0.82 to 0.98)§
Current drug use				
Yes (vs. no)	0.88 (0.77 to 1.00)	0.87 (0.76 to 0.99)§	0.74 (0.69 to 0.79)‡	0.74 (0.70 to 0.79)‡
Panic symptoms				
None	Ref	Ref	Ref	Ref
Some	0.94 (0.83 to 1.08)	0.94 (0.82 to 1.07)	0.96 (0.91 to 1.02)	0.96 (0.91 to 1.02)
Panic disorder	0.92 (0.80 to 1.07)	0.92 (0.80 to 1.07)	0.85 (0.80 to 0.90)‡	0.85 (0.80 to 0.90)‡
Depression screen				
Positive (vs. negative)	1.15 (1.02 to 1.30)§	1.15 (1.02 to 1.30)§	0.92 (0.88 to 0.97)§	0.92 (0.88 to 0.97)§

*Four different models were fit for each retention measure and drinking exposure type reported. Each model was adjusted for age, race, sex/sexual risk factor, CD4 category, viral load category, enrollment date, site, intravenous drug use as HIV risk factor.

†Heavy = AUDIT-C >3 for women or >4 for men.

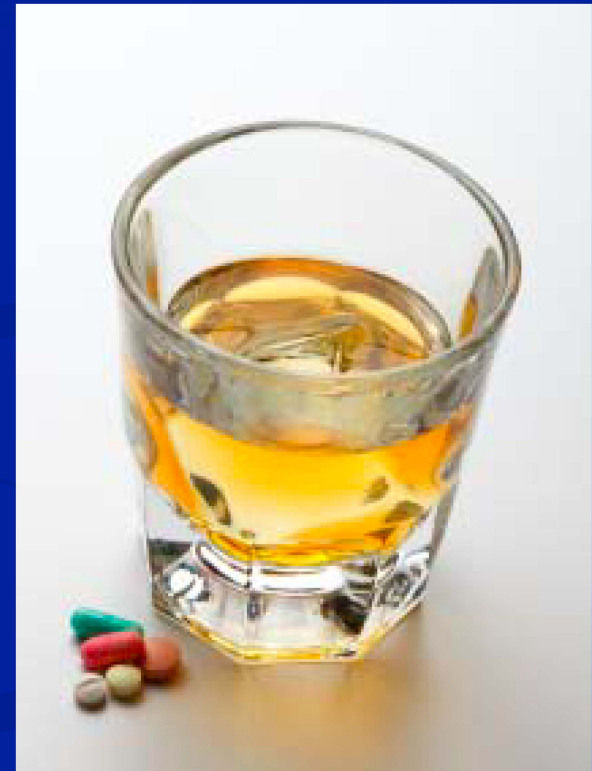
‡ $P < 0.0001$.

§ $P < 0.05$.

HIV Treatment Cascade: ART Adherence

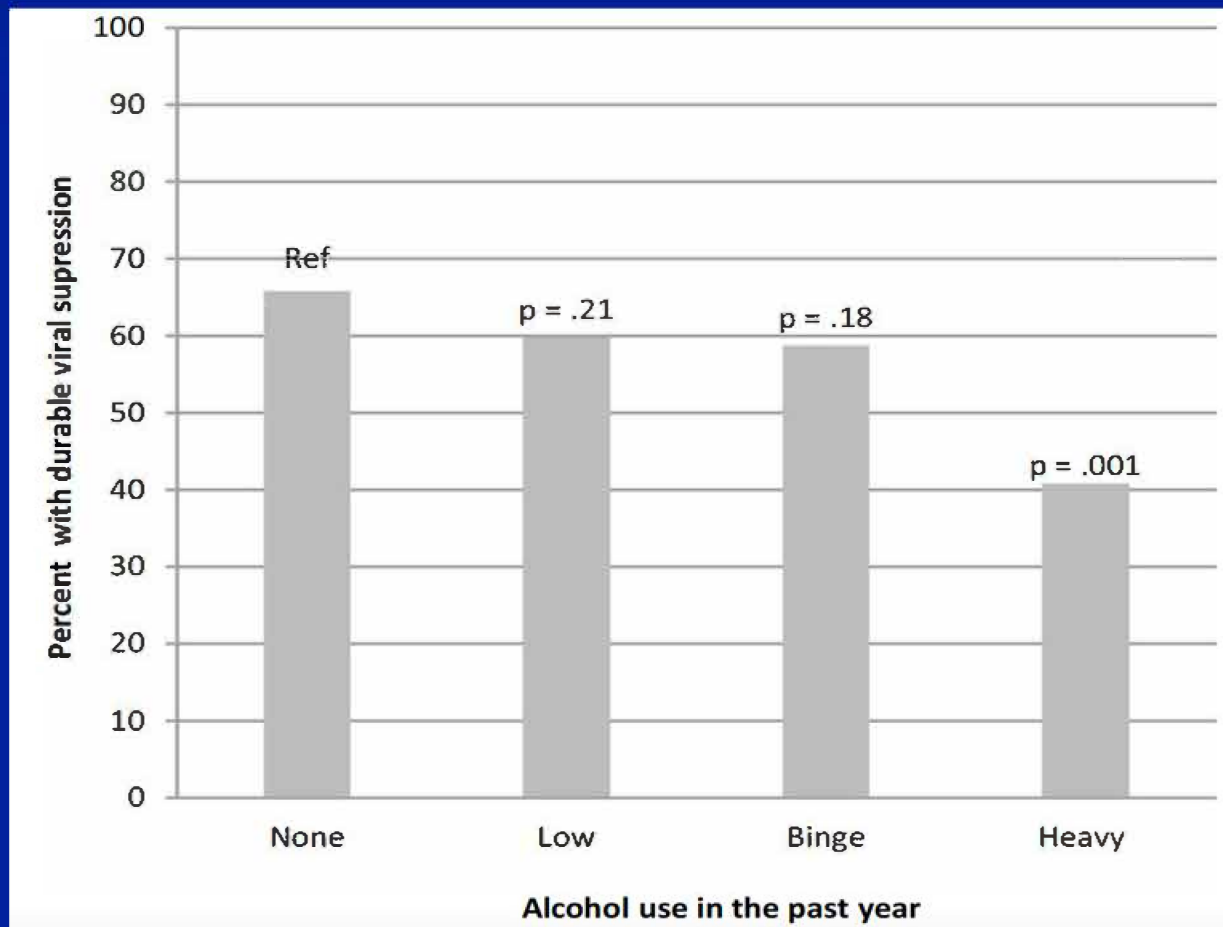
■ Evidence for a Causal Association?

- Schensul, Ha, Schensul, Sarna, & Bryant (2017)
 - TLFB, 940 PLWH in India
 - ↑ nonadherence on drinking days AND the day after



HIV Treatment Cascade: HIV Viral Suppression

- Cook, Zou, Kelso-Chichetto, et al. (2017)



Addressing Alcohol in the Context of Secondary Prevention:

Where Do We Go from Here?

- Condomless Sex -

Where Do We Go From Here: Addressing Condomless Sex among PLWH

- Alcohol-reduction interventions for PLWH (Scott-Sheldon et al., 2017)
 - Can brief interventions be condensed further?
 - Sub-population-specific, culturally appropriate
 - Implementation research (Wechsberg et al., 2017)
- Target alcohol-using PLWH with bio-behavioral HIV prevention initiatives

Where Do We Go From Here: Addressing Condomless Sex among PLWH

- **Promote protective factors/resilience in the context of alcohol use**

(Shuper et al., *AIDS and Behavior*, revise and resubmit)



Where Do We Go From Here: Addressing Condomless Sex among PLWH

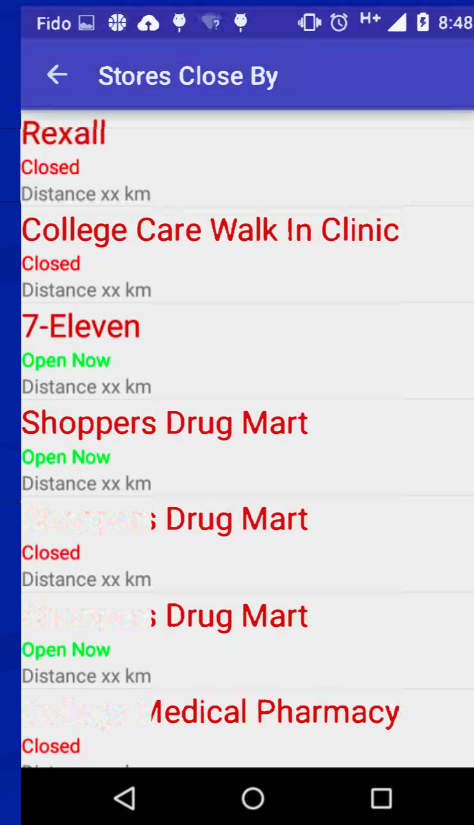
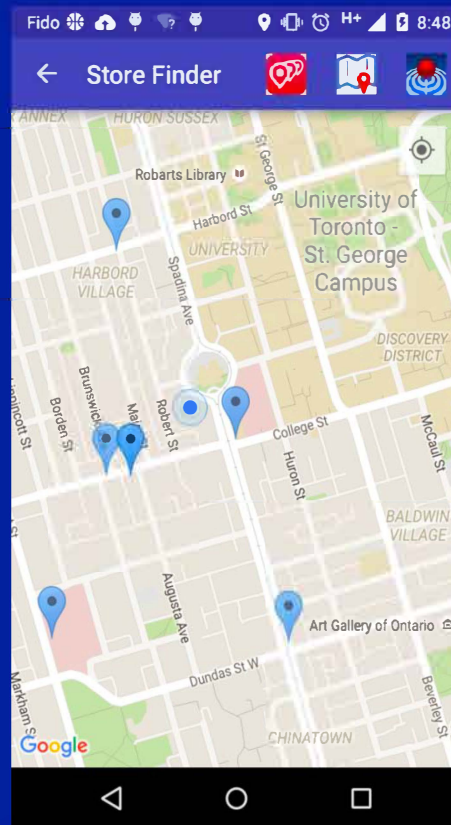
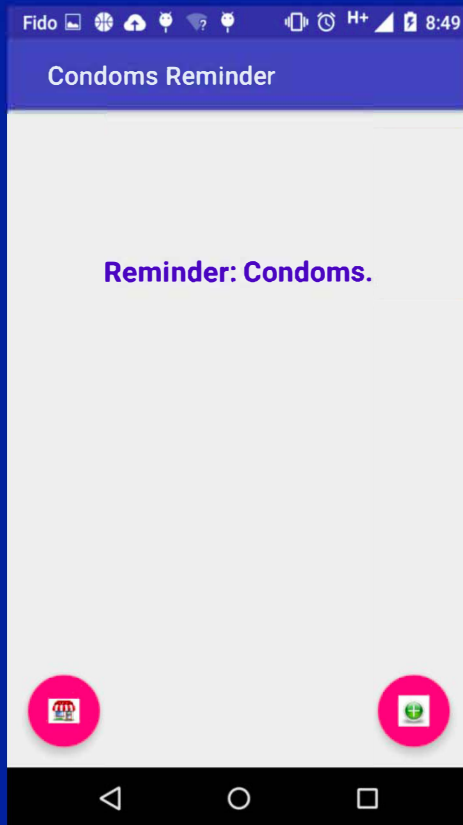
- **Alcohol venue-based interventions**
(Pitpitan & Kalichman, 2016)



Where Do We Go From Here: Addressing Condomless Sex among PLWH

■ “In-the-moment” prevention

(MacDonald et al., 2000; Dal Cin et al., 2006; Shuper et al., 2017)



Where Do We Go From Here: Addressing Condomless Sex among PLWH

- App-targeted prevention



Addressing Alcohol in the Context of Secondary Prevention:

Where Do We Go from Here?

- HIV Treatment Cascade -

Where Do We Go From Here: Addressing the HIV Treatment Cascade

■ HIV Testing/Diagnosis

- Widespread alcohol screening → triage → HIV testing
- Early and frequent HIV testing (e.g., heavy alcohol users)
- Ease of testing
 - Home
 - Community
 - Alcohol venues
 - *Reduced cost???*



Where Do We Go From Here: Addressing the HIV Treatment Cascade

■ Linkage to Care

- HIV diagnosis → identify alcohol users and provide enhanced/targeted linkage efforts
- Evaluate social and structural factors as drivers of/barriers to successful linkage (e.g., Carter et al., 2016)
 - Immediacy of referrals for alcohol problems
 - Co-location of services
 - Stigma-reduction for staff
 - Alcohol-related training for staff
- Design and evaluate streamlined, integrated linkage-to-care systems

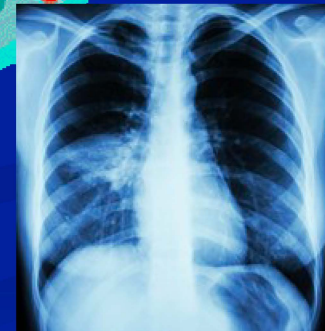
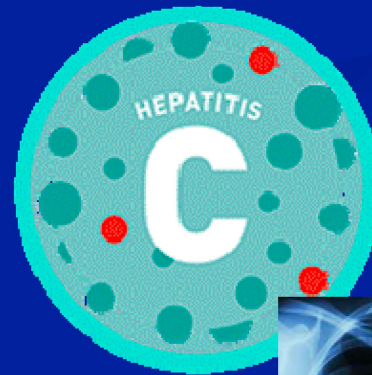
Where Do We Go From Here: Addressing the HIV Treatment Cascade

- **ART Uptake, Retention, Adherence, and VL**
 - Evaluate interventions designed to PREVENT the onset of heavy drinking and AUDs among PLWH (Barai et al., 2017)



Where Do We Go From Here: Addressing the HIV Treatment Cascade

- **ART Uptake, Retention, Adherence, and VL**
 - Design and evaluate comprehensive, integrated programs that address alcohol AND comorbidities



Where Do We Go From Here: Addressing the HIV Treatment Cascade

■ ART Uptake, Retention, Adherence, and VL

- Design and evaluate comprehensive, integrated programs that address alcohol AND socio-ecological factors

- Housing
- Food security
- Transportation



Where Do We Go From Here: Addressing the HIV Treatment Cascade

- **ART Uptake, Retention, Adherence, and VL**
 - Evaluate interventions that promote resilience and strengths



Where Do We Go From Here: Addressing the HIV Treatment Cascade

- **ART Uptake, Retention, Adherence, and VL**
 - Evaluate the efficacy of ART initiation and treatment in “novel” settings (e.g., Sharma et al., 2017)
 - “One-stop-shop” co-located services
 - Non-HIV medical clinics
 - Community-based venues
 - Home, workplace
 - Mobile sites, anywhere/anytime ART delivery
 - Alcohol-related settings

Where Do We Go From Here: Addressing the HIV Treatment Cascade

■ ART Uptake, Retention, Adherence, and VL

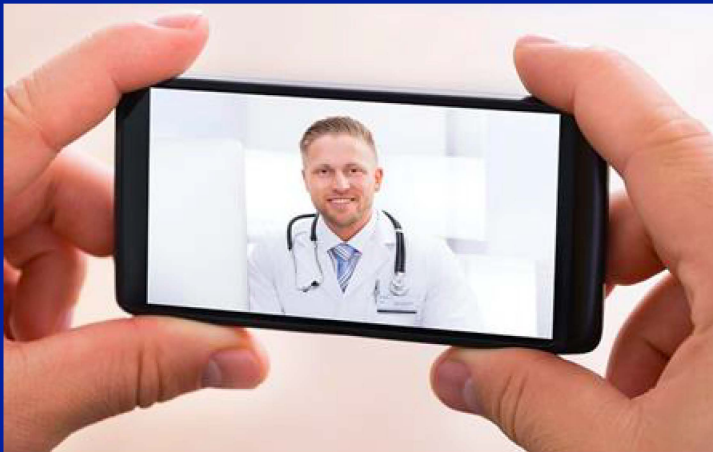
- Employ objective methods for identifying alcohol consumption

- Measurement
- Interventions



Where Do We Go From Here: Addressing the HIV Treatment Cascade

- **ART Uptake, Retention, Adherence, and VL**
 - Evaluate the delivery of alcohol- and HIV treatment-related interventions using technology



Where Do We Go From Here: Addressing the HIV Treatment Cascade

- **ART Uptake, Retention, Adherence, and VL**
 - Identify alcohol's role in early, late, and "repeat" attrition from HIV care
 - Reasons for attrition may vary across the HIV treatment lifespan (Fox & Rosen, 2017)
 - Identify reasons for returning to care

Where Do We Go From Here: Addressing the HIV Treatment Cascade

- **ART Uptake, Retention, Adherence, and VL**
 - Investigate alcohol in the context of an aging PLWH population
 - Changes in alcohol use trajectories
 - Increasing medical comorbidities (e.g., HAND)



Where Do We Go From Here: Addressing the HIV Treatment Cascade

- **ART Uptake, Retention, Adherence, and VL**
 - Investigate the impact of pharmacotherapy for AUDs, alone or in combination with behavioral interventions, within the context of the HIV treatment cascade



Addressing Alcohol in the Context of Secondary Prevention:

Where Do We Go from Here?

- Additional Considerations -

Where Do We Go From Here: Additional Considerations

- Evaluate the impact of alcohol-related structural/policy-level interventions on HIV transmission and the HIV treatment cascade
 - Taxation
 - Availability
 - Minimum pricing
 - Marketing



Where Do We Go From Here: Additional Considerations

- Evaluate the cost-effectiveness of alcohol-related initiatives for PLWH



- Cost-savings due to:
 - HIV infections averted
 - STIs averted
 - Avoidance of non-standard ART regimens
 - Reduction of alcohol-related harms (e.g., liver concerns, cancers, injury)

Conclusions

Conclusions

- Significant associations between alcohol and secondary prevention aspects
- Important research underway, but more needs to be done
- The way forward → technology, novel settings, strengths, comorbidities, implementation science, alcohol prevention

Questions and Discussion

Paul A. Shuper, Ph.D.
Centre for Addiction and Mental Health
33 Russell Street
Toronto, ON, M5S 2S1, Canada

Office: +1-416-535-8501, ext. 34097
Fax: +1-416-595-6899
E-Mail: paul.shuper@camh.ca

