

Effectiveness of Screening, Brief Intervention and Referral to Treatment (SBIRT) in Reducing Hazardous Drinking: Results from an Implementation Study in Primary Care Setting

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**INEBRIA conference, 18 September 2014
Warsaw, Poland**

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Funded by NIAAA R01AA18660

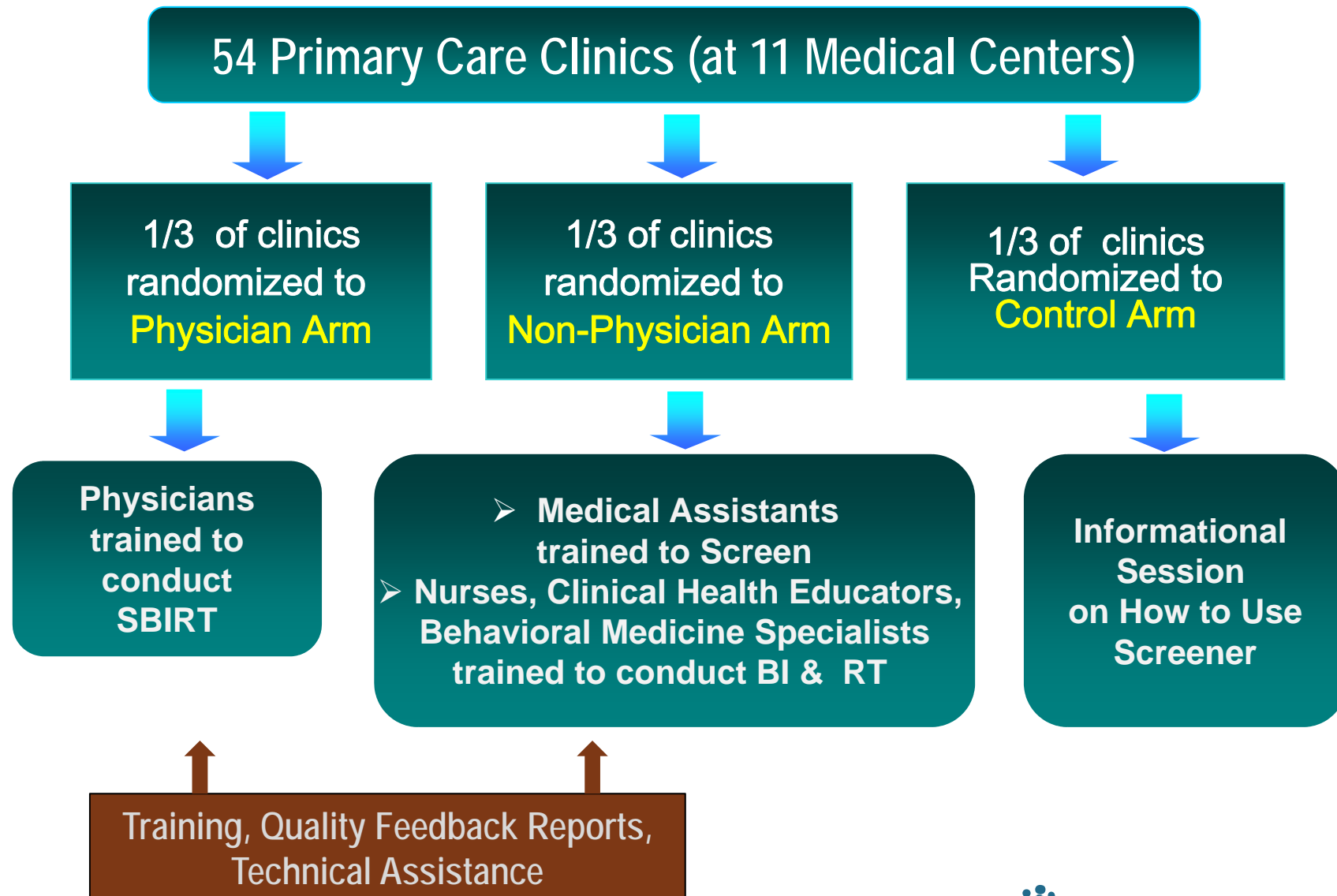
Background

- Multiple meta-analyses support the efficacy of screening and brief intervention (BI) on hazardous drinkers in the primary care (PC) setting (Ballesteros et al., 2004; Whitlock et al., 2004; Kaner et al., 2007; Jonas et al., 2012)
- A review of reviews (O'Donnell et al., 2013) supports the effectiveness of BI at reducing alcohol related problems across 56 trials and a wide range of patients in PC
- Implementation remains a challenge
- Some recent effectiveness and implementation studies conducted in PC found no significant effects of BI (Hilbink et al., 2012; Kaner et al., 2013; Williams et al., 2014)

Research Aim

Using secondary data, this observational cohort study aims to evaluate the effectiveness of receiving brief intervention or referral to treatment (BI/RT) on alcohol use outcomes at subsequent screening

ADVISE Cluster Randomized Trial



DOC FLOWSHEET

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Flowsheet: ALCOHOL SCREENING QUALITY OUTREACH-SUPPORT STAFF Quality Outreach-Provider

ALCOHOL SCORE...	<input checked="" type="checkbox"/>		07/19/10	
Daily Limits:	<input checked="" type="checkbox"/>		1400	
Weekly Limits:	<input checked="" type="checkbox"/>			Daily Limits:
Dependence Risk:	<input checked="" type="checkbox"/>	(Male 18-65) How many times in the past year have you had 5 or more drinks a day?	2	
Actions Performed:	<input checked="" type="checkbox"/>	(Female 18+) and (Male 66+) How many times in the past year have you had 4 or more drinks a day?		
				Weekly Limits:
		On a typical drinking day, how many drinks do you have?		
		On average, how many days a week do you have an alcoholic drink?		
				Dependence Risk:
		In the past year, have you sometimes been under the influence of alcohol in situations where you could		
		Have there often been times when you had a lot more to drink than you intended to have?		
		In the past year, have you sometimes been under the influence of alcohol in situations where you could have caused an accident or gotten hurt?		
		Was an intervention performed?		
		Was patient referred to CD Services?		

Intervention: NIAAA Guide

- Based on NIAAA Guide “Helping Patients Who Drink Too Much”
- Feedback, advice, addressing readiness and collaborative goal-setting
- Providing written NIAAA patient education brochure (English, Spanish, Chinese, and Vietnamese translations)
- Referral to specialty treatment for further assessment

Year 1 Implementation Outcomes (N=639,613)

	Physician Arm	Non-Physician Arm	Control Arm
% Screened	9.2%	50.9%	3.5%
% Given BI/RT among those screened positive	44.4%	3.4%	2.7%

Notes:

1. Differences in rates of screening were significant between each of the two intervention arms vs. Control arm as well as between the two intervention arms.
2. Differences in rates of BI/RT among those who screened positive were significant between the Physician arm vs. Non-Physician arm or Control arm.

Mertens JR, Chi FW, Sterling SA, Satre D, Ross TB, Allen S, Pating D, Campbell, CI, Lu YW, Weisner CM. (Under Review.) Physician versus Non-Physician Delivery of Alcohol Screening, Brief Intervention and Referral to Treatment in Adult Primary Care: The ADVISE Cluster Randomized Controlled Implementation Trial. *BMC Med.*

System-wide Adoption of Alcohol SBIRT at KPNC

	ADVISE Study	KPNC Region-wide
% Screened	51% (by Medical Assistants in Non-Physician Arm)	86% (by Medical Assistants)
% Given BI/RT among those screened positive	44% (by Physicians In Physician arm)	39% (by Physicians)

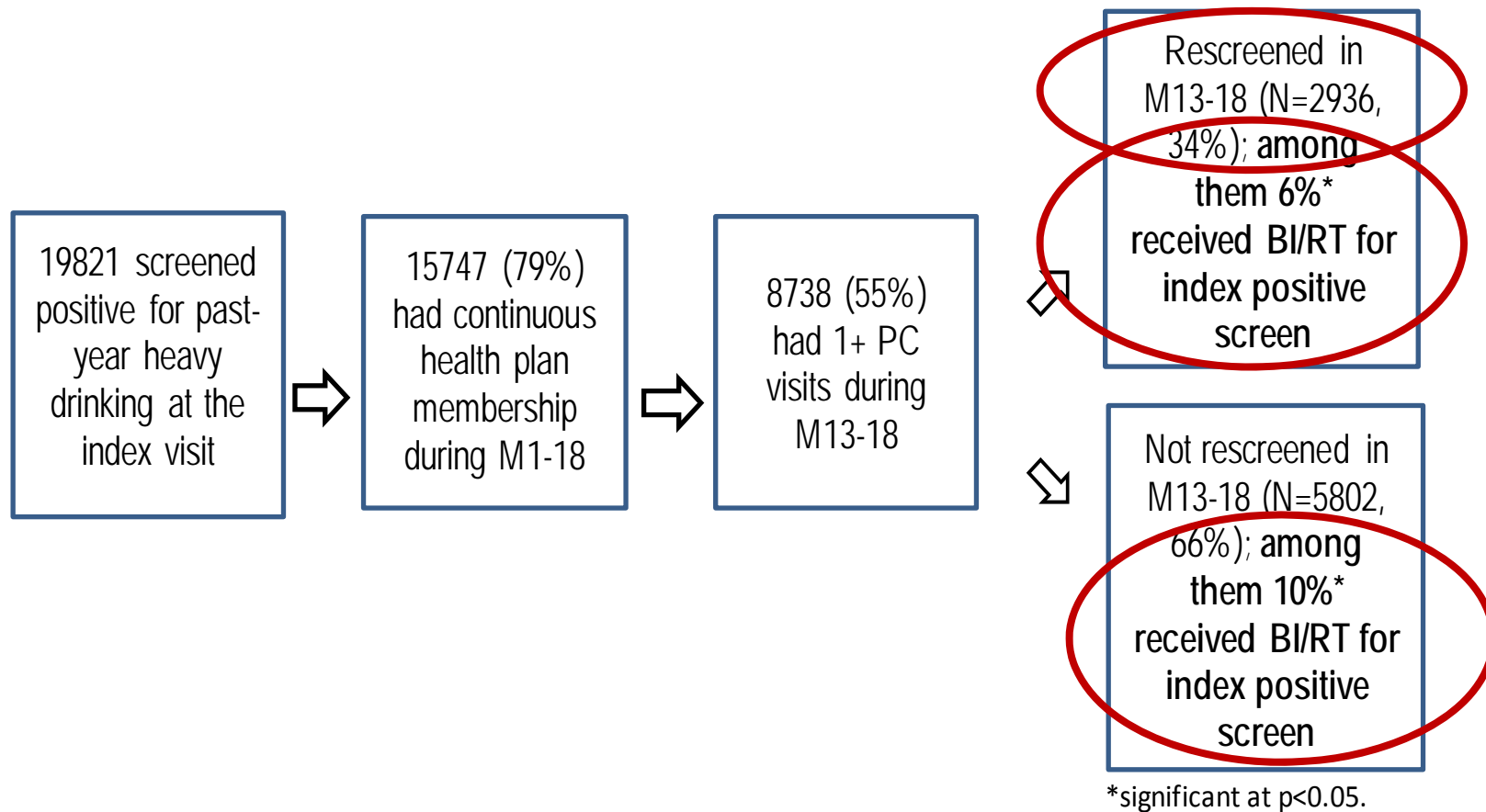
Current Analyses: Effectiveness of BI/RT on Patient Alcohol Use Outcomes (*Secondary Aim of the ADVISE Study)

Out of the patients who screened positive in year 1
(i.e., index positive screening)



Was receiving BI/RT associated with lower odds of hazardous drinking at subsequent screening during months 13-18 post the index positive screening?

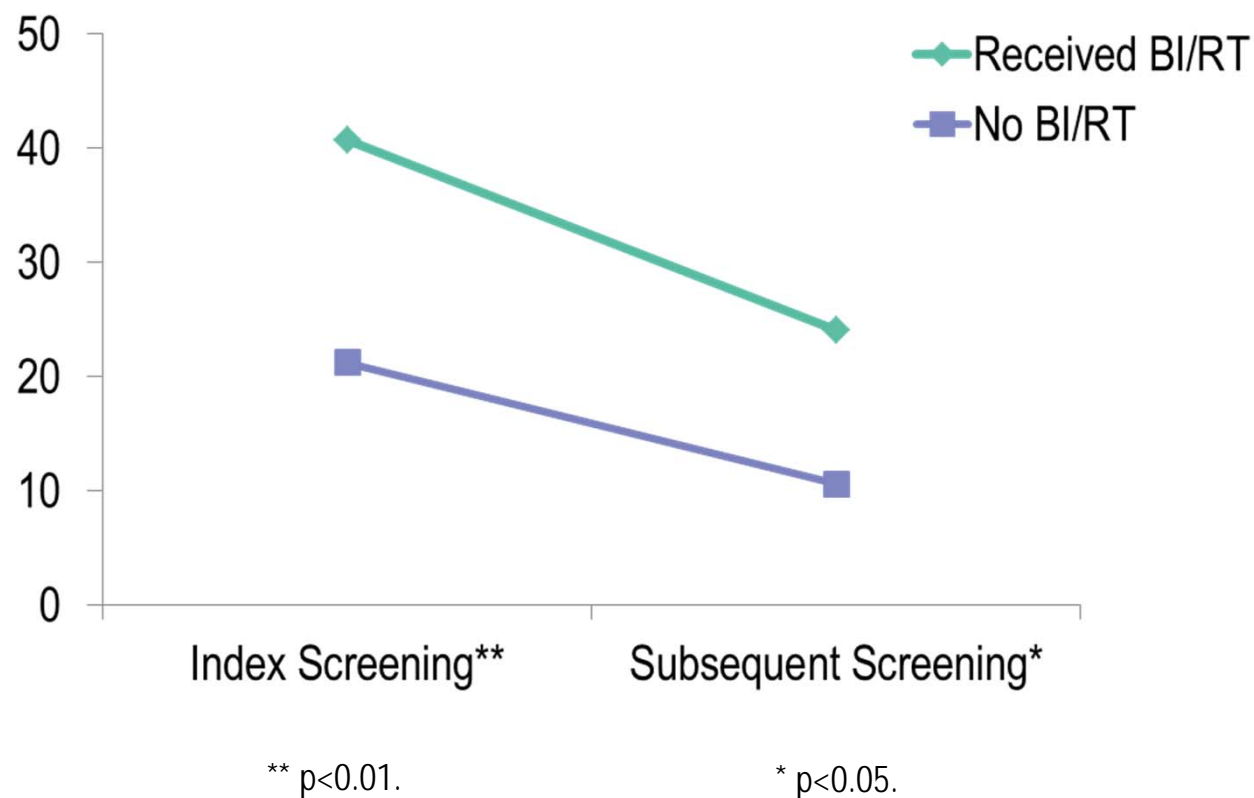
Selection of the Analytical Sample



Statistical Analyses

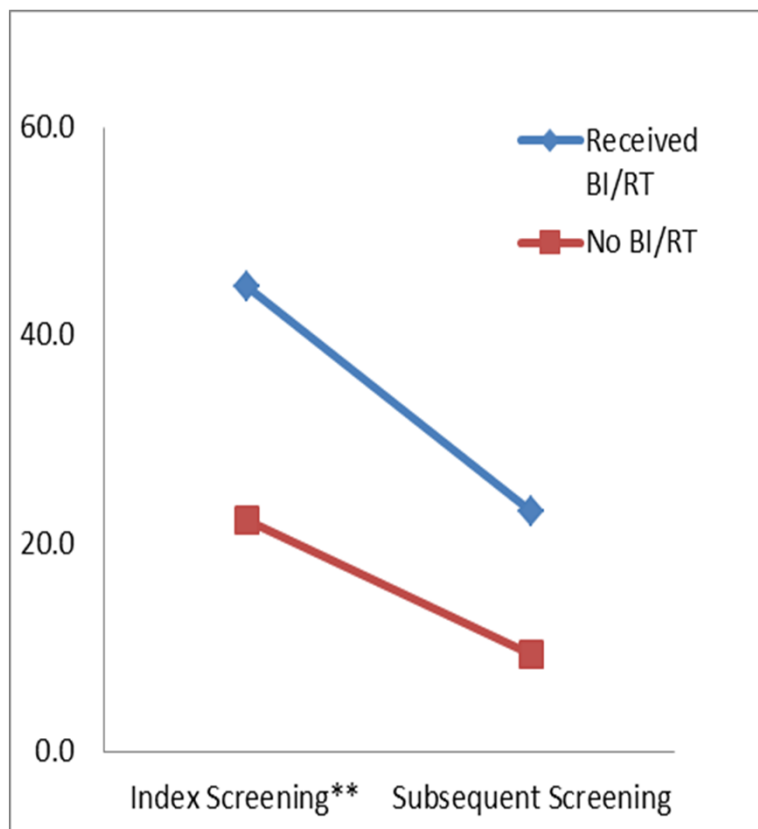
- Multivariate GEE logistic models examined the association between receiving BI/RT for positive index screen and hazardous drinking at subsequent screening
 - Accounting for clustering effect at the clinic level, and adjusting for demographics, past-year hazardous drinking days at index event, comorbidity and treatment arm
 - Addressing attrition and potential selection bias with inverse probability weighting (IPW)

Average Number of Past-Year Hazardous Drinking Days



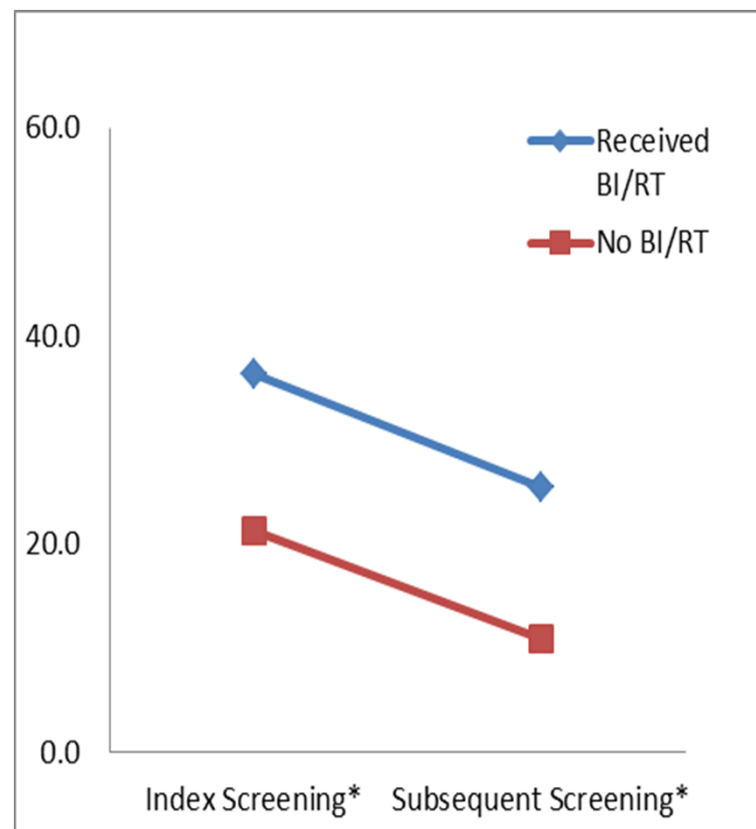
Average Number of Past-Year Hazardous Drinking Days

Physician Arm



** p<0.05.

Non-Physician Arm



* p<0.10.

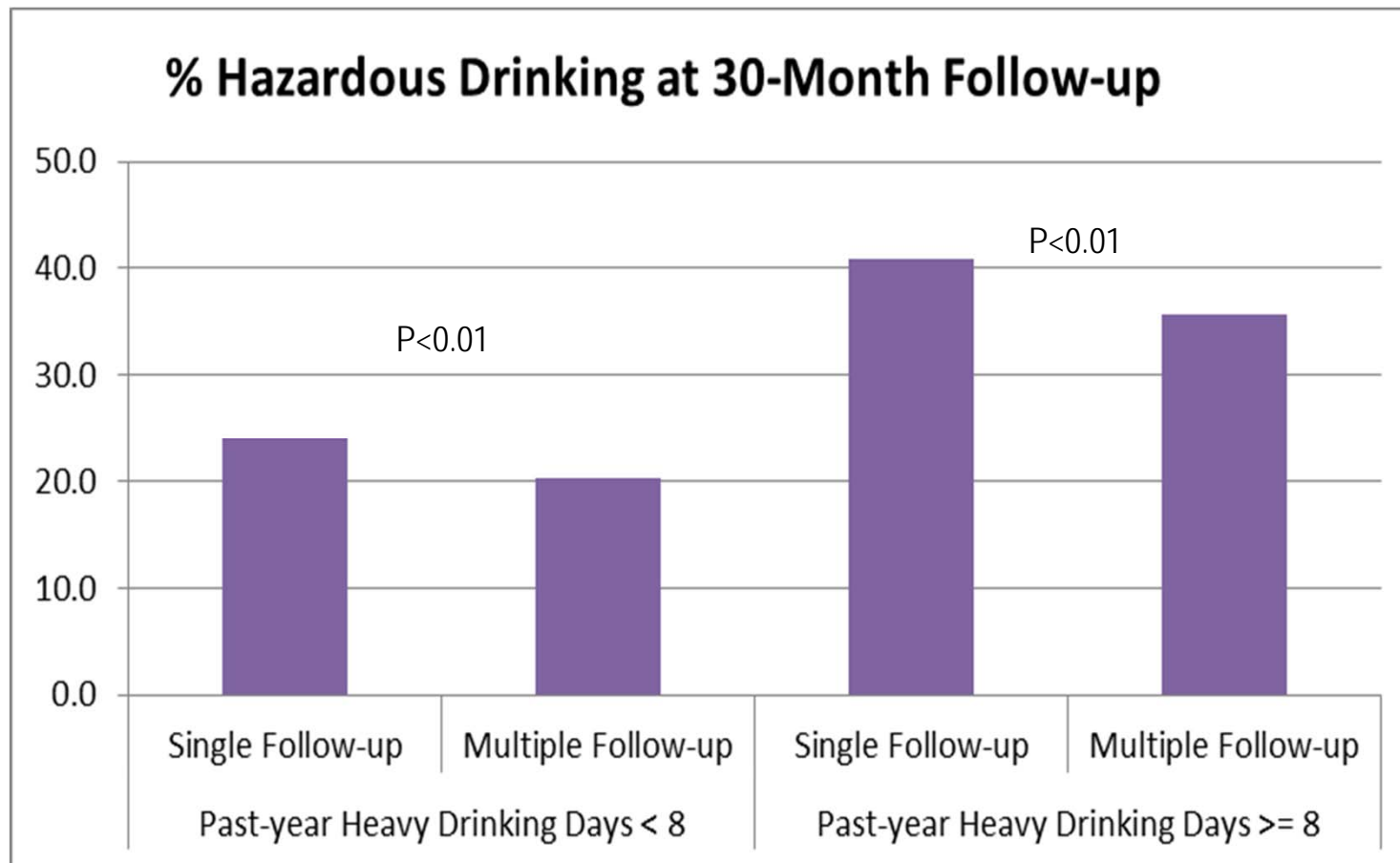
Receiving BI/RT for Positive Index Screen vs. Hazardous Drinking at Subsequent Screening

		CC/No IPW (N=2936)			With IPW (N=2790) ^{a,b}			With IPW (N=2643) ^{a,c}		
		OR	Lower	Upper	OR	Lower	Upper	OR	Lower	Upper
Received BI/RT for positive index screen	Yes vs. No	1.36	(0.96 , 1.93)		1.88	(0.90 , 3.94)		0.59	(0.26 , 1.33)	
Study Arm	PCP vs. Control	0.99	(0.45 , 2.19)		1.21	(0.58 , 2.56)		0.73	(0.36 , 1.47)	
	NPP vs. Control	1.25	(0.58 , 2.73)		1.43	(0.71 , 2.88)		1.21	(0.59 , 2.51)	
Past Year Heavy Drinking Days \geq 8 at Index Screen	Yes vs. No	1.80	(1.42 , 2.27)	‡	1.84	(1.42 , 2.38)	‡	1.76	(1.33 , 2.33)	‡
Gender	Female vs. Male	0.69	(0.55 , 0.86)	†	0.77	(0.61 , 0.96)	*	0.72	(0.57 , 0.91)	†
Age (per 5 year increase)		0.94	(0.88 , 0.99)	*	0.94	(0.90 , 0.99)	*	0.95	(0.90 , 1.00)	*
Race/Ethnicity	Af. Am. vs. White	0.50	(0.34 , 0.75)	‡	0.44	(0.29 , 0.67)	‡	0.48	(0.32 , 0.71)	‡
	API vs. White	0.70	(0.44 , 1.10)		0.59	(0.34 , 1.03)		0.63	(0.37 , 1.07)	
	Hispanic vs. White	0.66	(0.56 , 0.77)	‡	0.66	(0.53 , 0.81)	‡	0.60	(0.49 , 0.73)	‡
	Other vs. White	0.62	(0.43 , 0.88)	†	0.71	(0.47 , 1.05)		0.56	(0.38 , 0.82)	†
Any Chronic Dx 1Yr Prior to Baseline	Yes vs. No	0.96	(0.79 , 1.17)		0.94	(0.75 , 1.17)		0.96	(0.77 , 1.19)	
Any Psych Dx 1Yr Prior to Baseline	Yes vs. No	0.94	(0.77 , 1.15)		0.89	(0.72 , 1.09)		0.90	(0.71 , 1.14)	
Any Alcohol Dx 1Yr Prior to Baseline	Yes vs. No	1.00	(0.55 , 1.83)		0.88	(0.49 , 1.60)		1.03	(0.54 , 1.96)	
Any Drug Dx 1Yr Prior to Baseline	Yes vs. No	0.50	(0.27 , 0.92)	*	0.68	(0.32 , 1.44)		0.71	(0.38 , 1.30)	
Duration between Index and Follow-up Screening (per 30 day increase)		0.95	(0.90 , 1.00)	*	0.93	(0.89 , 0.98)	†	0.94	(0.90 , 0.99)	*
No. PC Visits during Months 13-18		1.01	(0.98 , 1.04)		1.01	(0.96 , 1.05)		1.02	(0.98 , 1.05)	

Notes:

1. CC=Complete Case. IPW=Inverse Probability Weighting. *p<0.05; †p<0.01; ‡p<0.001.
2. ^a Standards errors might be over-estimated; re-analyses with bootstrapping in progress.
 - ^b Inverse weights truncated at 95 percentile to avoid extreme values.
 - ^c Inverse weights truncated at 90 percentile to avoid extreme values.

Hazardous Drinking at Subsequent Screening by Screening Patterns over 30 Months



Limitations

- An observational study
 - BI/RT NOT randomized
- Single item screener asking about heavy drinking days in past year
 - Won't be able to pick up effects in months 1-12
- Potential variation in BI/RT delivery

Discussion and Next Steps

- No association between initial BI/RT and hazardous drinking at subsequent screening
 - Higher severity at index screening related to receipt of BI/RT
 - Providers re-screening and documentation behaviors (Kim et al., 2013)
 - One time BI/RT not enough
 - Heterogeneous treatment effects (HTE)
- Next Steps
 - Different types of attrition (disenrollment from health plan, not having a PC visit, not re-screened)
 - Additional, more frequent screening and BI/RT during longer follow-up
 - Other outcomes/other data source
 - Looking beyond the cohort who screened positive in year 1

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Thank you

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