

# Challenges and Opportunities in Using Respondent Driven Sampling to Recruit MSM for HIV Bio-behavioural Research

Ontario HIV Treatment Network (OHTN) Conference  
November 2012

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# Vanguard



- Coordinated by the BC-CfE, launched in 1995
- Open cohort sample of gay, bi and other MSM in Vancouver
- Self-administered questionnaire of behaviours, attitudes, beliefs and annual HIV testing

## Limitations & Biases

- Non-probability sampling bias
- Limitations in generalizations to the population of interest
- Poor external validity



# M-Track (ManCount)



- M-Track is an enhanced surveillance system, coordinated by PHAC
- Monitors trends in HIV, viral hepatitis, other STI, other sexual and testing behaviours
- Cross-sectional at regular intervals using Venue-based or Time-location Sampling





	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S
George	Blue	Grey	Blue	Grey	Grey	Grey	Blue	Blue	Grey	Grey	Grey	Grey	Grey	Blue	Blue
Bill	Grey	Blue	Blue	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Blue	Grey	Grey	Grey	Grey
Hector	Grey	Grey	Grey	Grey	Grey	Blue	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
Lucien	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
Stan	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Blue	Blue	Blue	Blue
Raymond	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Blue	Blue	Grey	Grey	Grey	Grey	Grey	Grey
Ali	Grey	Grey	Grey	Grey	Grey	Grey	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
Phil	Grey	Grey	Blue	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Blue	Grey	Grey

Slide courtesy of Dr. Mark Gilbert, BCCDC





	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	Probability
George																0.33
Bill																0.20
Hector																0.07
Lucien																1.00
Stan																0.40
Raymond																0.07
Ali																0.60
Phil																0.00

Slide courtesy of Dr. Mark Gilbert, BCCDC



# Time-location Sampling Limitations and Biases

## Limitations

- Significant preparation time (each time sampling occurs)
- May have insufficient sampling frame

## Biases

- If people don't attend, they are not included
- Different behaviour patterns among venue attenders
- Frequent attenders




# Background to Momentum



- Expanded, universal, free of cost access to highly active antiretroviral therapy (HAART) in BC represents a province wide population level biomedical intervention
- Evidence that expanded access to HAART may be effective in further reducing HIV transmission
- Potential effect of Treatment as Prevention on population level depends on individual risk
- May be socio-cultural implications for why we have not seen a decline in new infections among MSM



# Study Design



Respondent Driven Sampling (RDS) is used to recruit two cross-sections ( $n \sim 1000$  each), the first which will also construct a longitudinal cohort ( $n \sim 700$ ) with six month follow-ups.

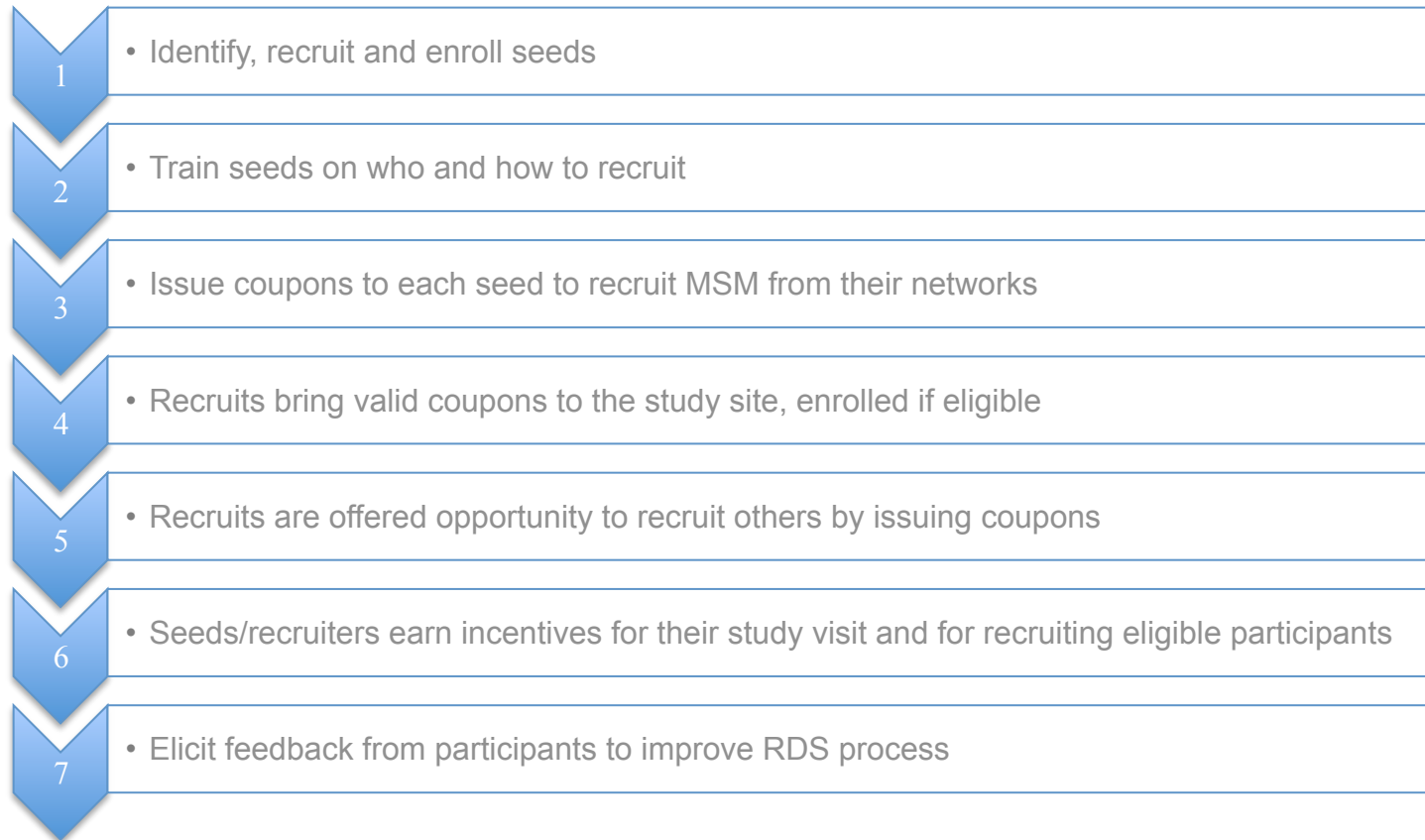
## RDS

- Chain-referral sampling designed to produce probabilistic samples with minimal selection bias
- Accounts for selection biases, such as network size and network homophily by collecting data on 'who recruits who?'



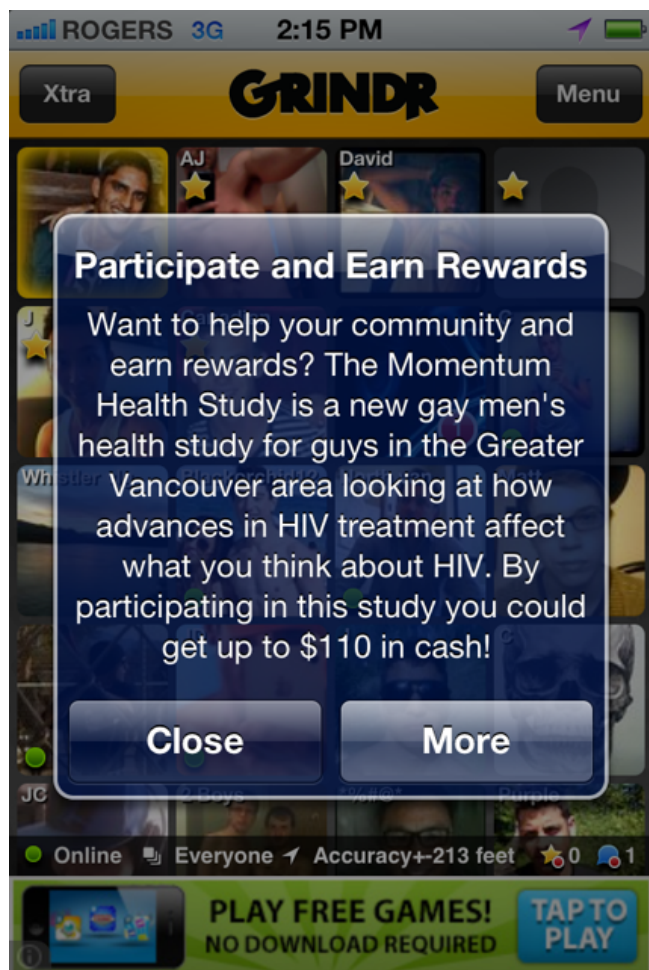


# Steps of RDS





- Identify, recruit and enroll seeds



### Seed Recruitment

Total (to date): 54

Community partners and social contacts

Social networking (Facebook and Twitter)

Grindr™ Broadcast Message

Xtra! West Advertising


Momentum serial  
cross-section #1 (to  
date) = 176





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- Train Seeds How to Recruit

- 
- “Our study works by peer-recruitment, which means we need you to help recruit other guys to participate from your social or sexual networks”

Please keep in mind the following when recruiting for us:

1. Recruit guys you know – your friends, partners, lovers – NOT strangers
2. Who identify as male, regardless of sex as birth
3. Who are 16 years of age or older
4. Who are currently sexually active with other men
5. Who are interested in participate, as the success of our study depends on their participation.



3

- Issue coupons to each seed to recruit MSM from their networks



 @momentumstudy  
 /momentumstudy

You could win a **\$2000** travel voucher  
**\$250** Apple store gift card  
 or up to **\$90** cash!

What to expect?  
 Confidential computer survey  
 Free HIV & STI testing






Make an appointment now!  
**604 558 2017**

Find out more:  
**www.momentumstudy.ca**

Suite 505-1200  
 Burrard St., Vancouver

Tues – Thurs 11-7  
 Fri – Sat 9-5


Voucher #

Referrer #



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## User account

E-mail

Enter your e-mail address.

Password

Enter the password that accompanies your e-mail.







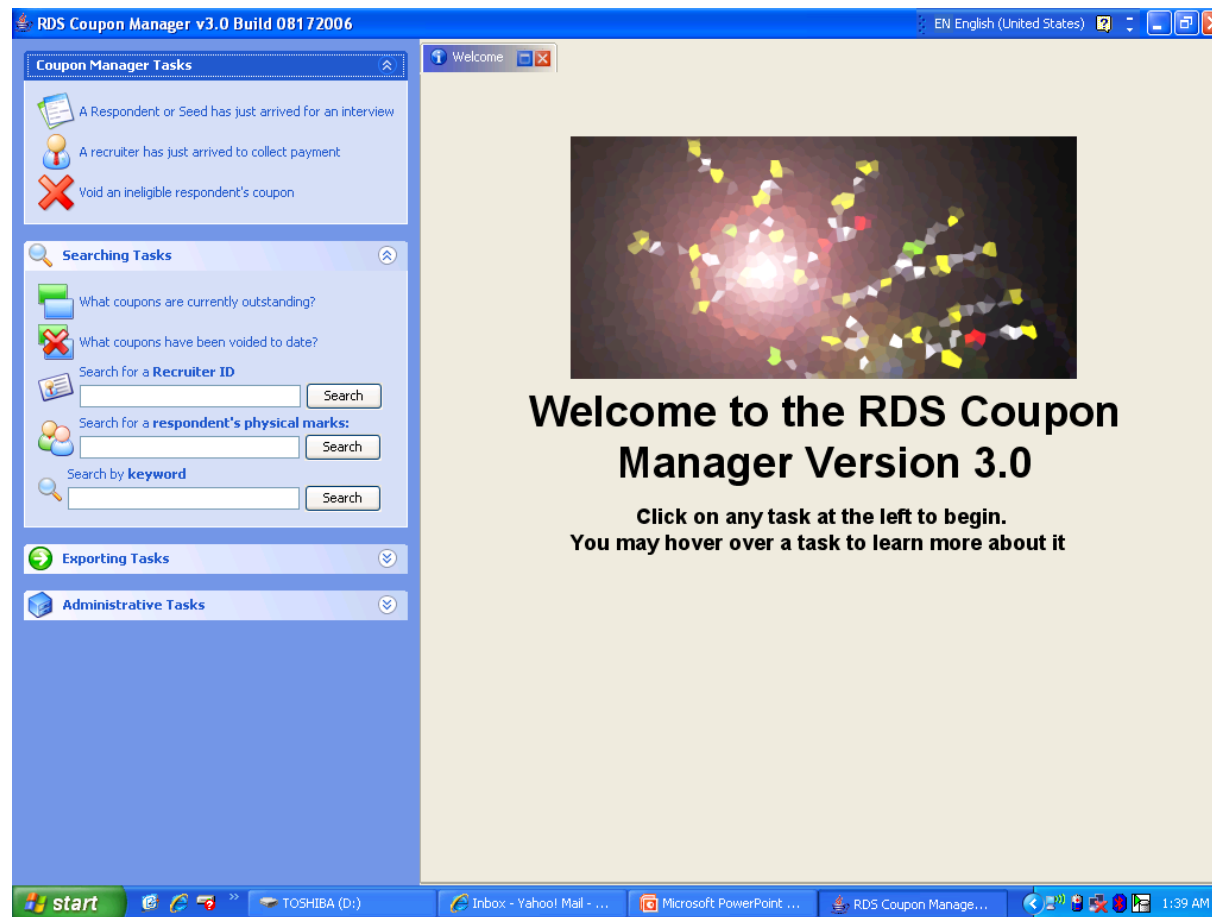






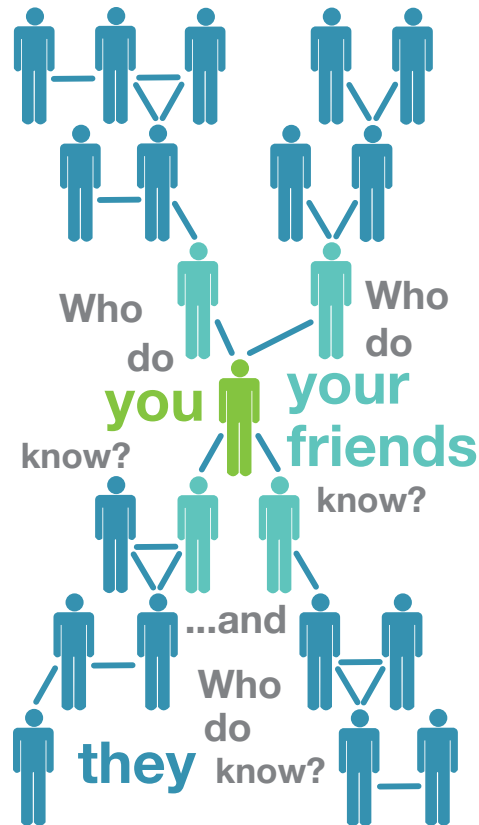

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- Recruits bring valid coupons to the study site, enrolled if eligible



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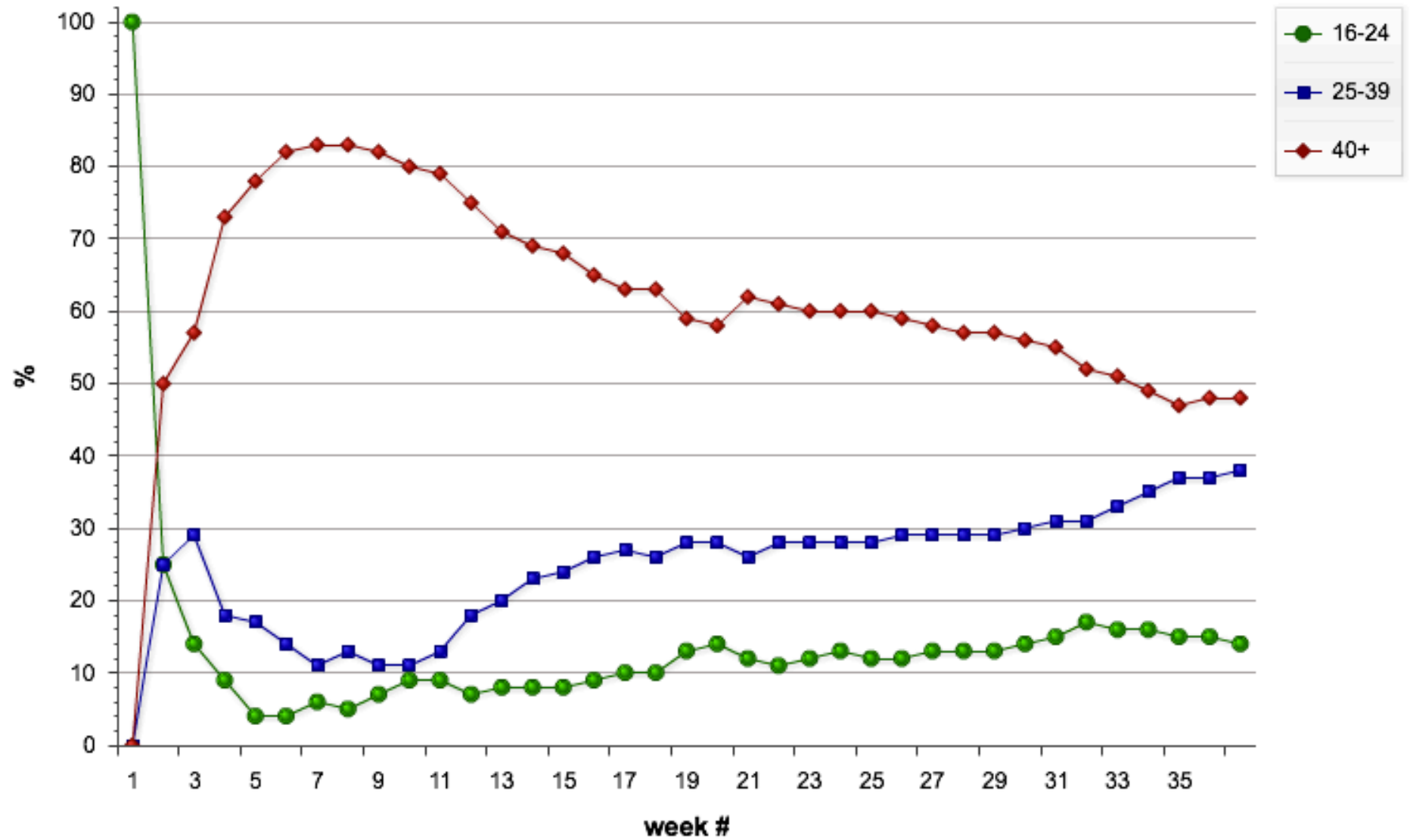
- Recruits are offered opportunity to recruit others by issuing coupons



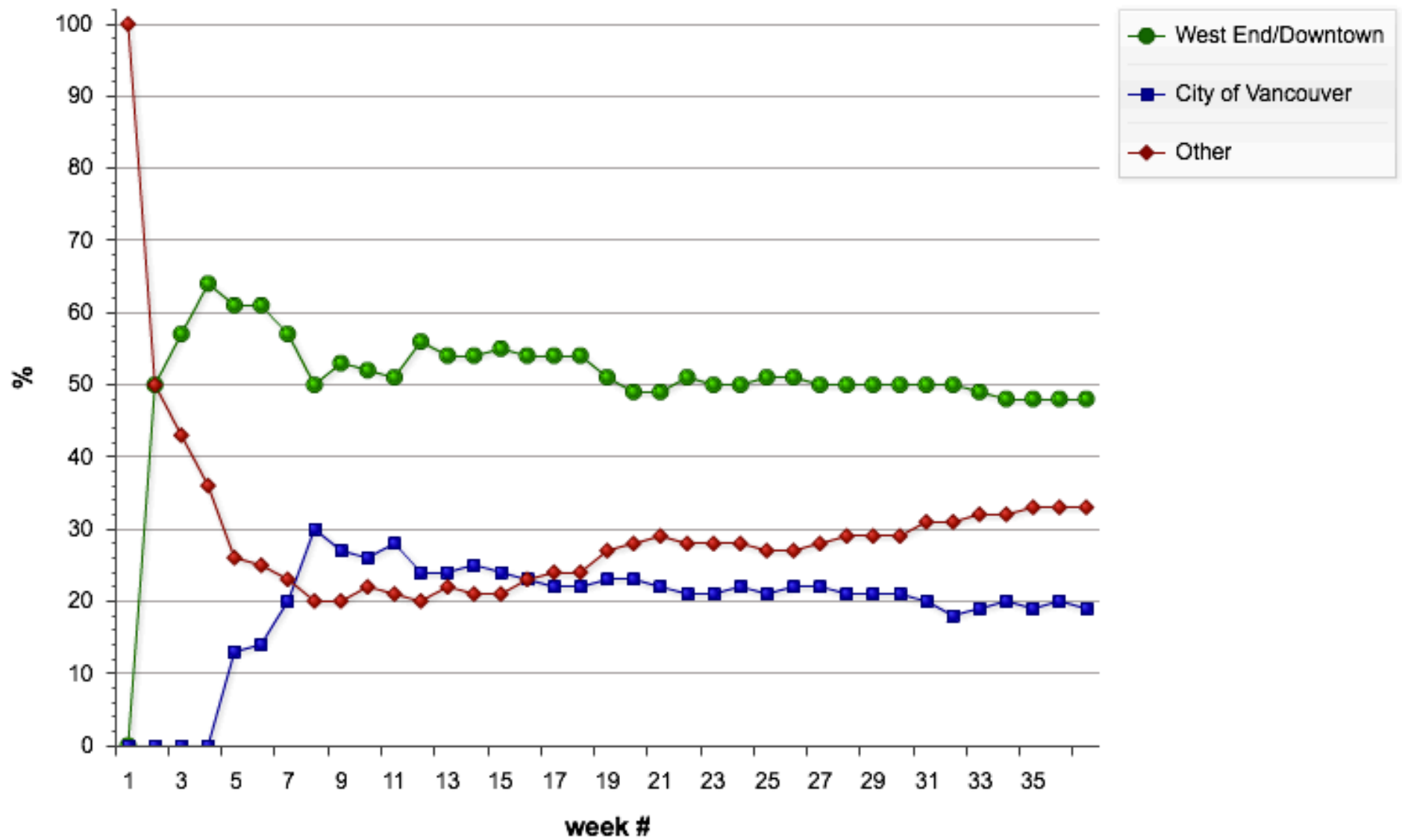
- Coupons should be pre-determined, though some art is needed – I.e. Momentum gives 6, but some networks that recruit quicker than others we issue 1
- Monitoring important key to determine sample stability



Age Category



Area of Residence Category





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- Recruits are offered opportunity to recruit others by issuing coupons

## Primary Incentive

- \$50 cash OR
- Equivalent to \$10 draw tickets for 6-month travel gift certificate valued at \$2000 or 1-month draw for \$250 Apple Store gift card

## Secondary Incentive

- \$10 or equivalent draw ticket for each eligible participant recruited





- Elicit feedback from participants to improve RDS process

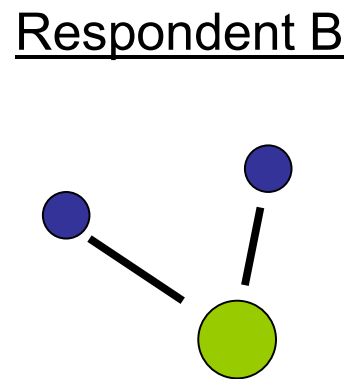
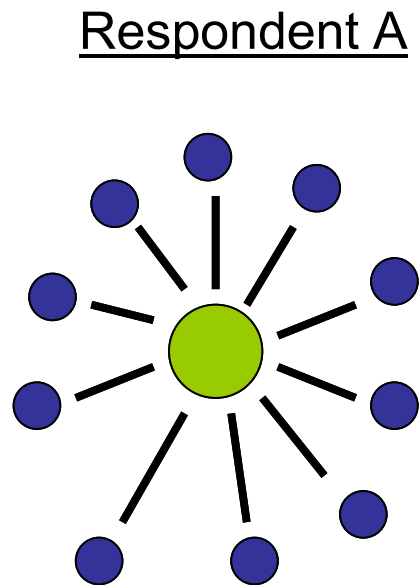


- February to September 2012 our team made call backs to Momentum participants
- 92 participants received calls, 25 agreed to participate in 10 minute follow up interview
- Only one did not give out any RDS coupons and more than half of coupons were distributed within one week following participation
- Participants most cited the free and confidential STI testing and incentives to recruit their friends
- RDS coupons originally had expiry date to motivate recruitment, but found guys were not coming after their expiry so removed coupon expiry dates



# RDS Biases

Figure 5. Recruitment Bias



- Respondent A: 10 ways to be recruited
- Respondent B: 2 ways to be recruited
- If all else is equal, R-A is 5 times **more likely** to be sampled than R-B

Slide courtesy of Henry Fisher Raymond, San Francisco Department of Public Health



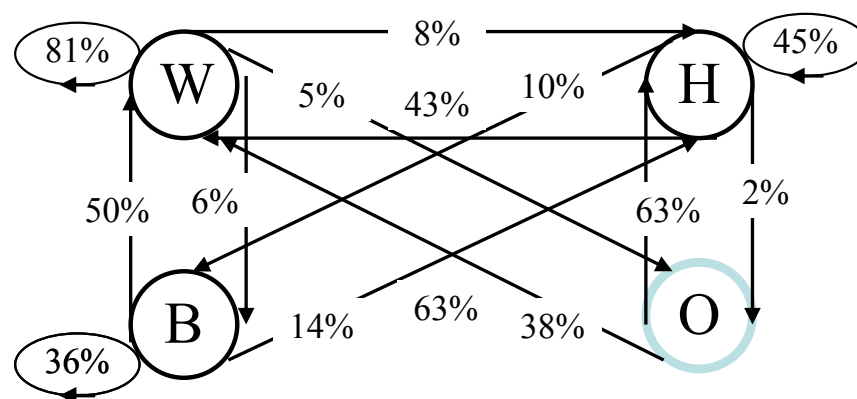
# RDS Bias Adjustment

## Network Size

- How many gay, bi and other MSM do you know in greater Vancouver?
- How many do you feel comfortable inviting to participate in Momentum?
- How many Facebook friends to do you have?

## Homophily

Figure 4. A Statistical Theory: Recruitment as a Markov Chain, W=white, B=black, H=Hispanic, O=other



# Conclusions



- RDS is an alternative recruitment strategy to convenience sampling and time-location sampling
- There are a number of operational challenges and opportunities to consider when using RDS for HIV/STI biobehavioural research, including seed selection, data monitoring, participant tracking, recruitment training, incentive schemes



# Acknowledgements

## Funding Agencies



BRITISH COLUMBIA  
CENTRE *for* EXCELLENCE  
*in* HIV/AIDS



## Academic Investigators & Governing Research Ethics Councils



THE  
UNIVERSITY OF  
BRITISH  
COLUMBIA



SIMON FRASER UNIVERSITY  
THINKING OF THE WORLD



University  
of Victoria



# Acknowledgements

## Community Partnerships



## Clinical Coordination & STI Screening



## Research Consultation



# Thank You!



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