

# Implementing the “early” HIV test in Vancouver: from acute diagnosis to undetectable identity

Mark Gilbert, Daniel Grace

CATIE Webinar

March 1, 2016



CIHR Team in the  
Study of Acute HIV  
Infection in Gay Men  
**Early Recognition  
and Rapid Response  
to HIV Status**



**CIHR IRSC**  
Canadian Institutes of Health Research  
Institut de recherche en santé du Canada



## Learning (and study) objectives

- To understand what the “early” HIV test is, how it was implemented, and its impact on detecting acute HIV infections
- To understand how implementing the test was situated within the lives of HIV positive and negative gay men in Vancouver





**Mom? Dad?  
..... I'm an MSM**

**And all this time I thought  
he was gay!**



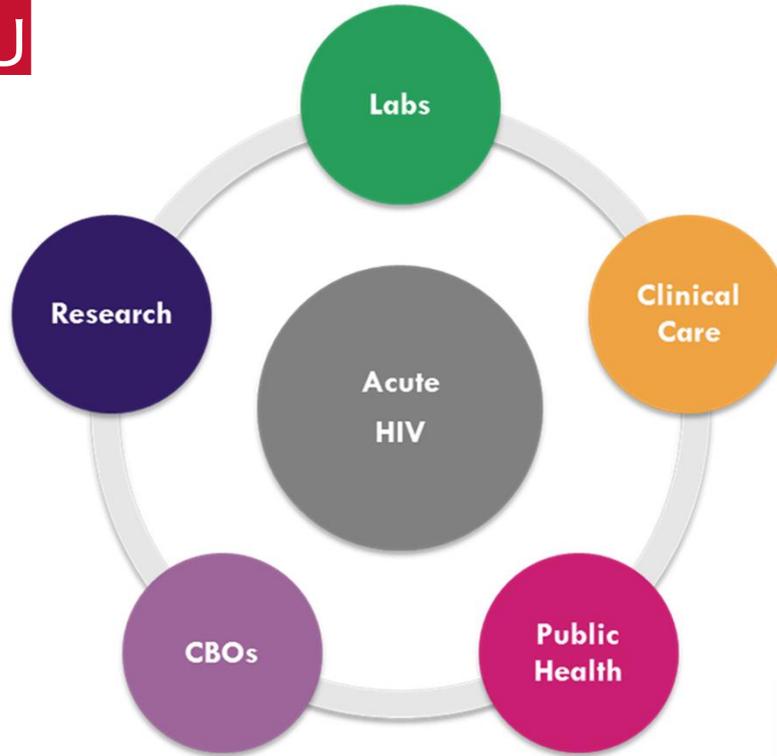
**For the details visit  
[Acutehivstudy.com](https://Acutehivstudy.com)**



# Team grant partners



Public Health Agency of Canada



BC Centre for Disease Control  
AN AGENCY OF THE PROVINCIAL HEALTH SERVICES AUTHORITY





## Summary of methods (2009-2012)

### ■ Intervention:

- implementation of pooled nucleic acid amplification testing (pooled NAAT)
- Six clinics accessed by gay men in Vancouver
- Two social marketing campaigns



Analysis of HIV laboratory and surveillance data

### ■ HIV positive cohort

- Gay men with laboratory test results indicating acute HIV infection, or a negative HIV test in the past year
- N=25 (19% of eligible)



6 surveys and 4 interviews over 1+ years after diagnosis

### ■ HIV negative cohort

- Gay men testing HIV negative at the HIM Sexual Health Centre
- N=166 (17% of eligible)



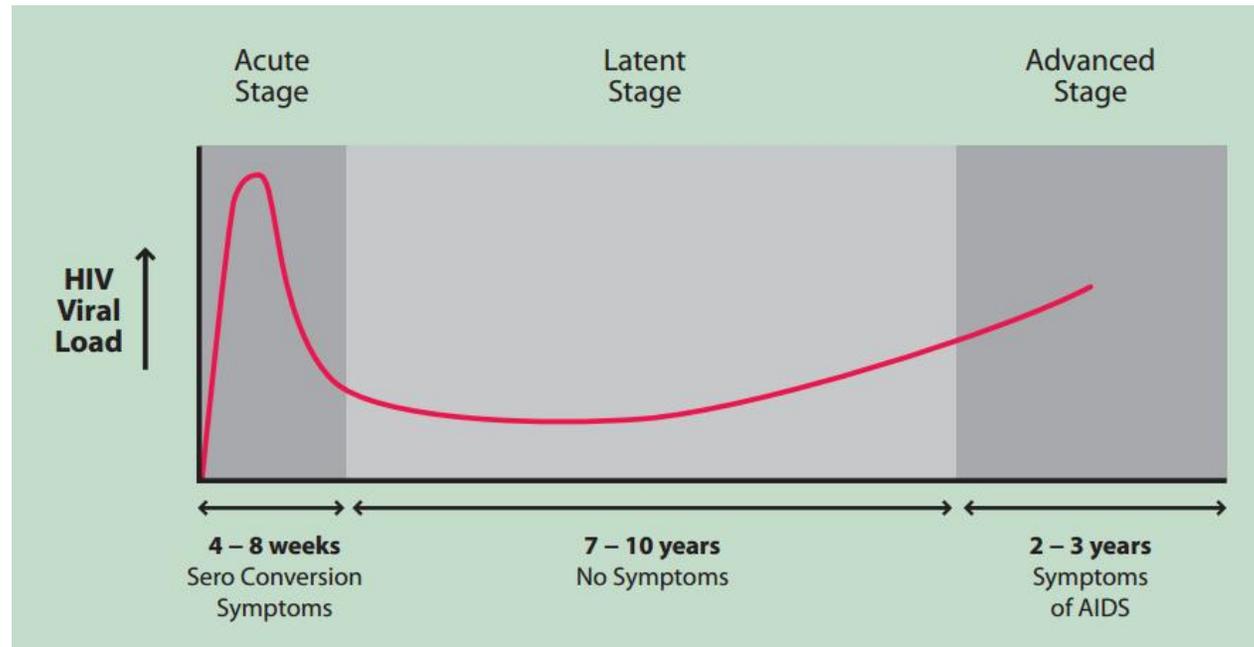
4 surveys over 1 year; 2 interviews (baseline & 1 year) with 33 men reporting condomless anal sex

# Acute HIV infection and Pooled NAAT





# Why is acute HIV important?

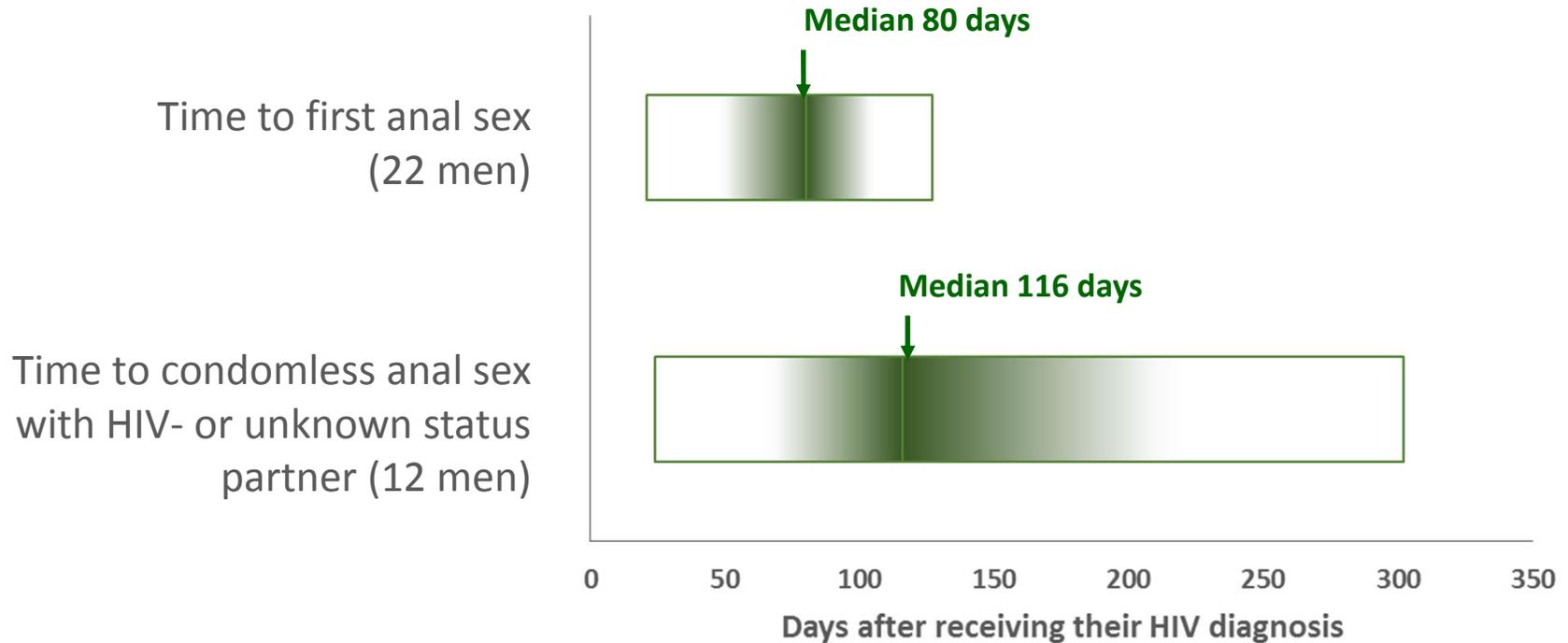


- **Clinical benefit if detected and start ART**
  - Optimal clinical outcomes, possible functional cure?
- **Increased likelihood of transmission**
  - High viral load & typically unaware of infection
  - Driver of HIV incidence – more influence in the context of increasing TasP?



# Behaviours change after diagnosis

HIV positive cohort (25 men with recent or acute HIV infection)



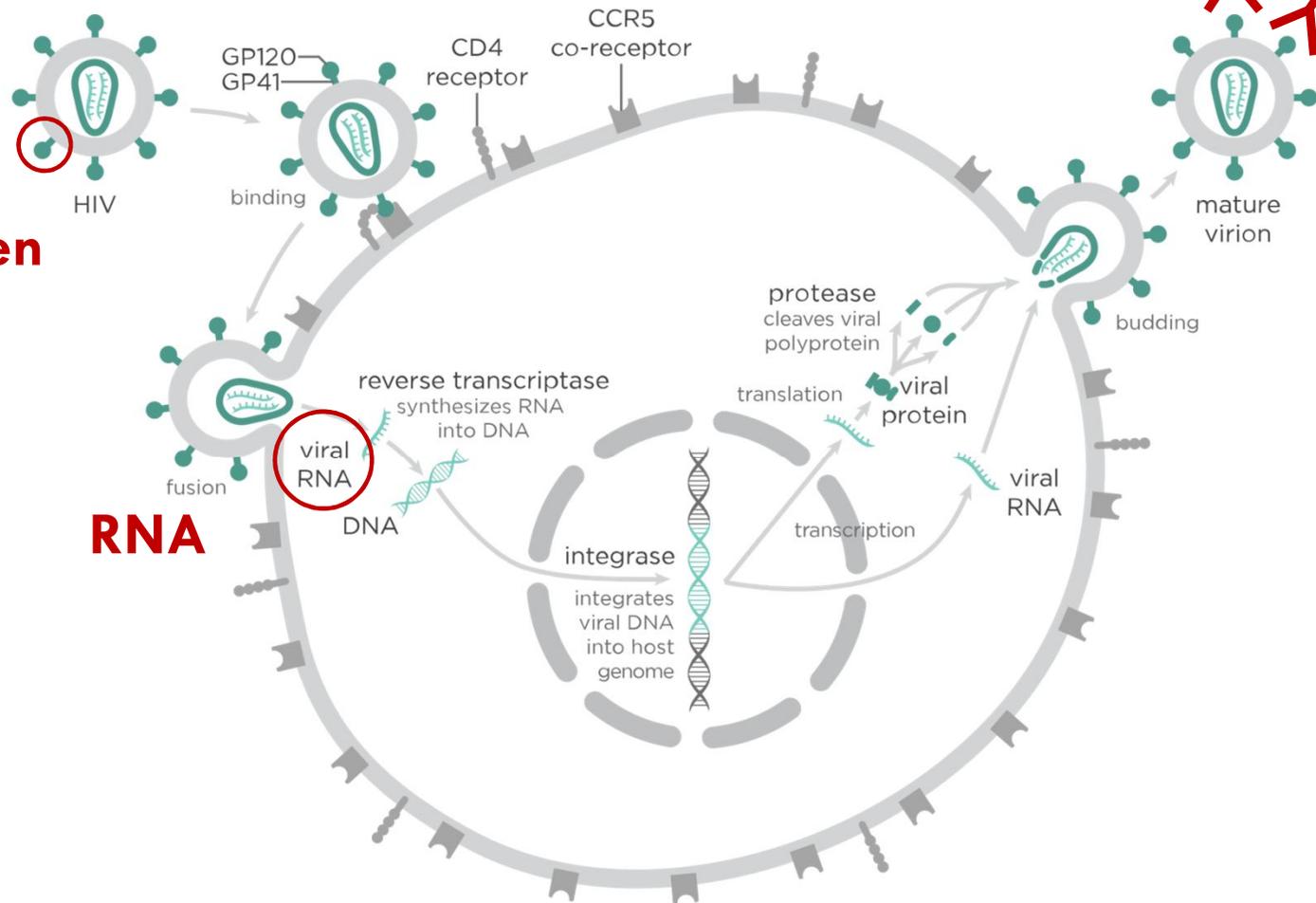
- After adjusting for other factors, odds of CAS remained significantly lower after diagnosis than before



# HIV Life Cycle

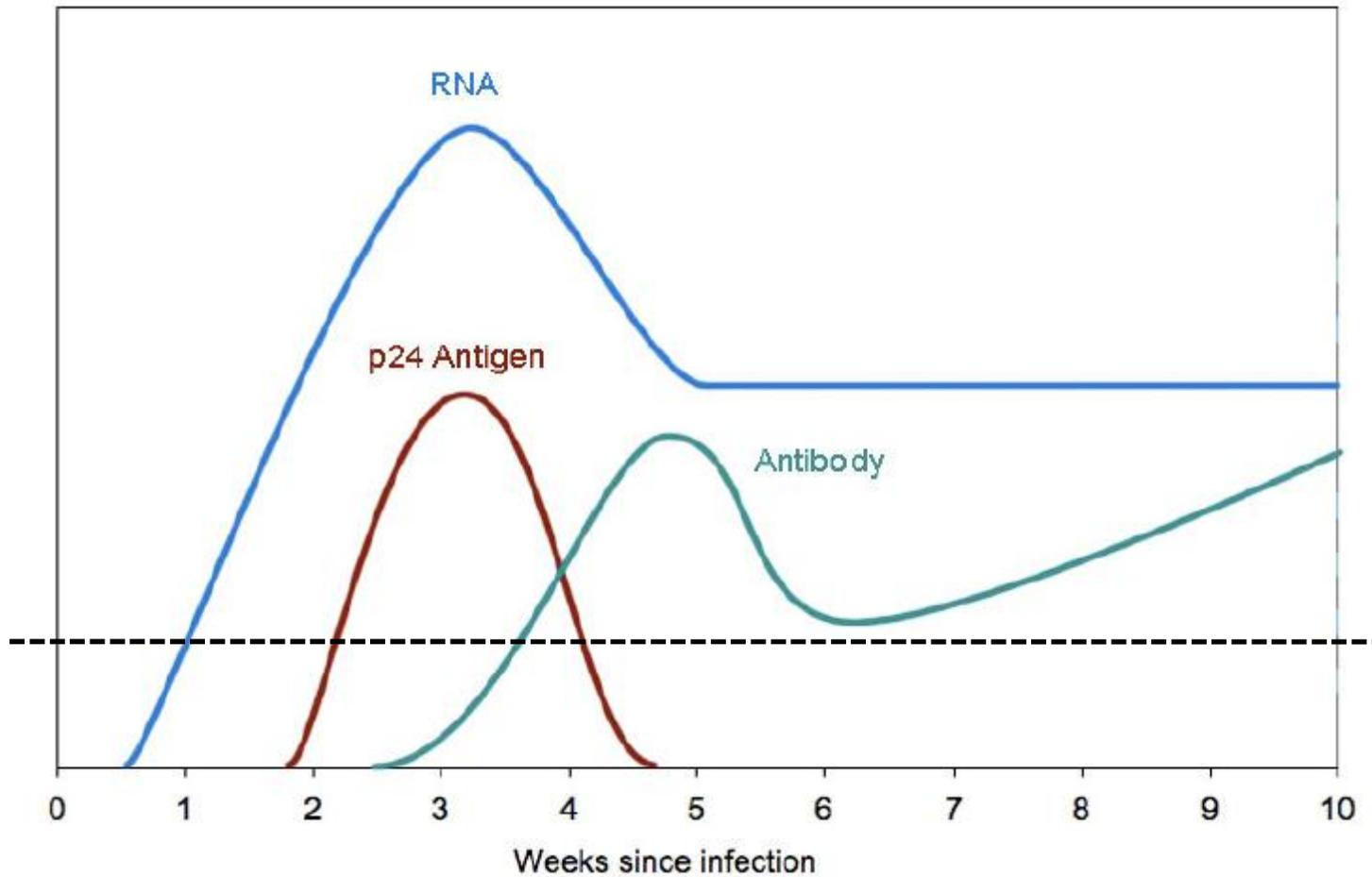
**P24 antigen**

**Antibodies**



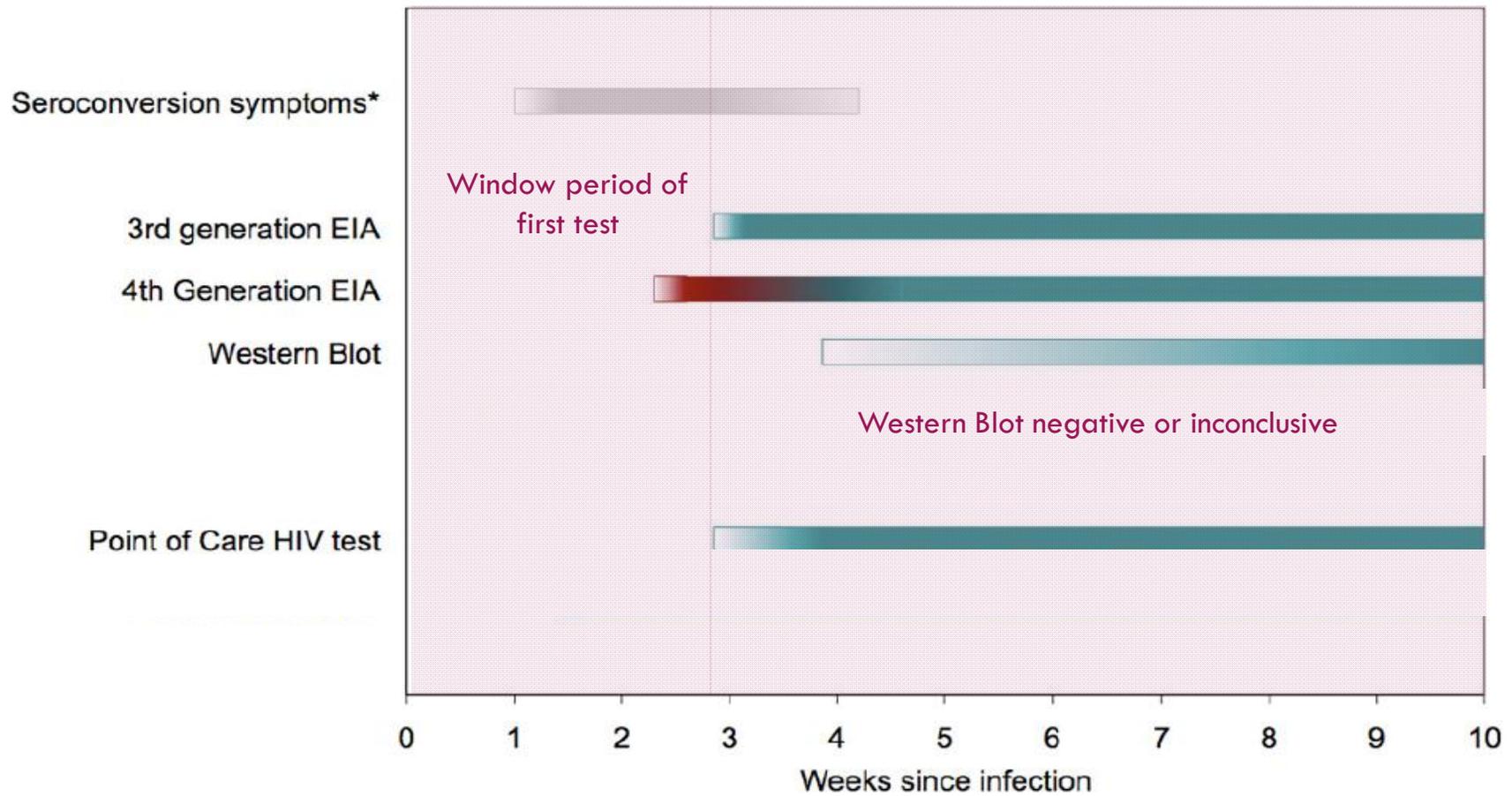


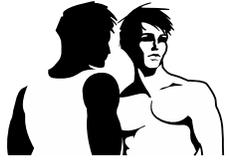
# When do markers of HIV appear?



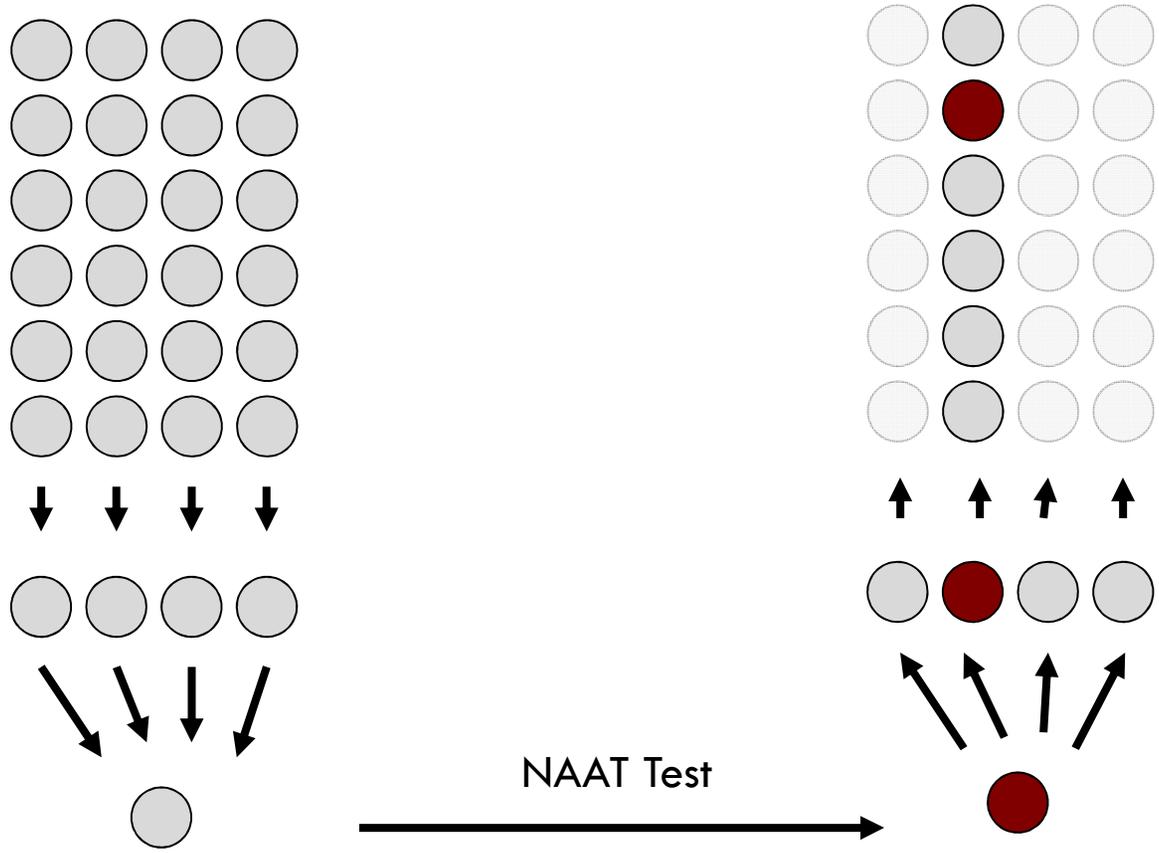


# Window periods of BC tests (2009-2014)





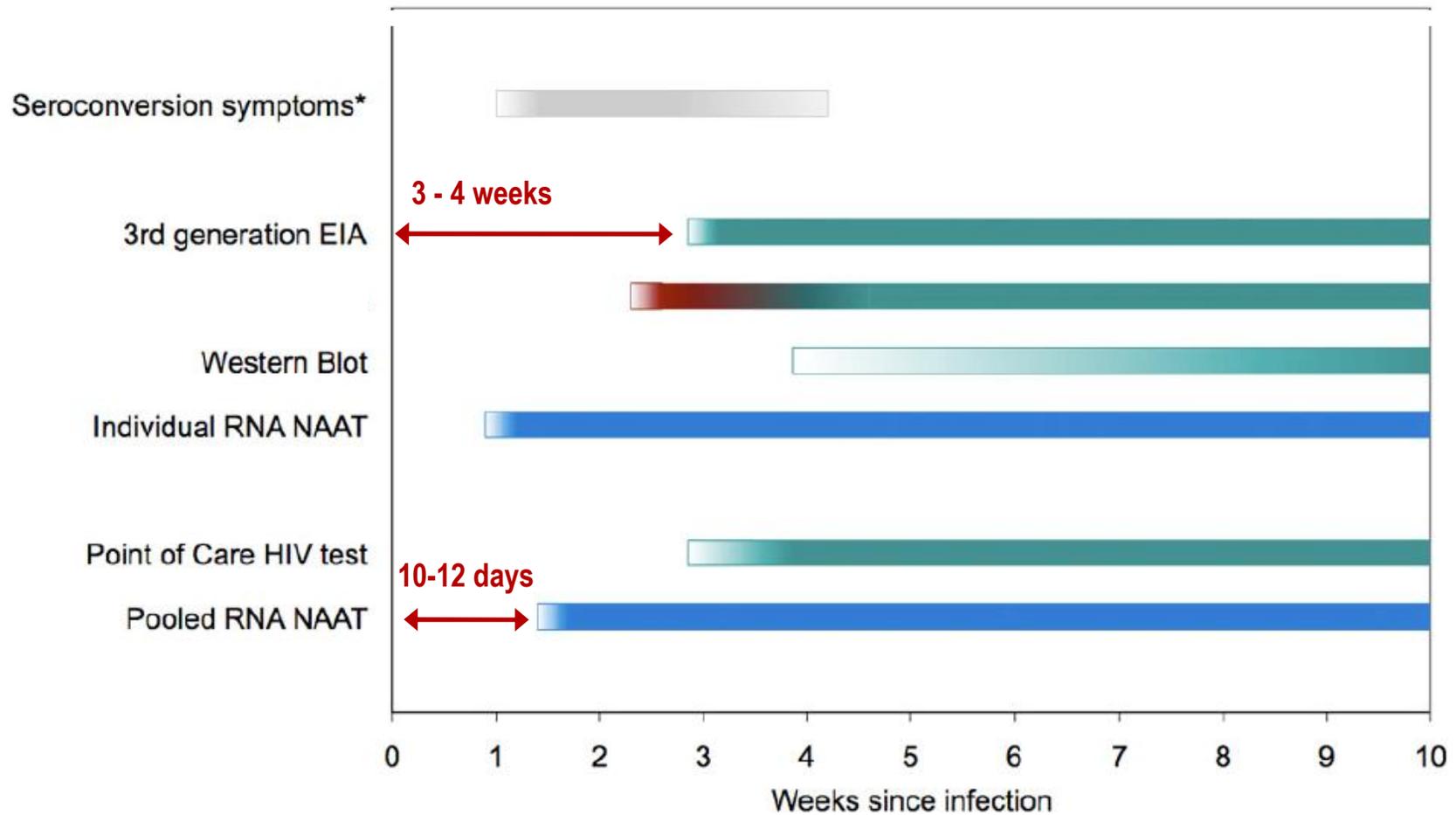
# Pooled Nucleic Acid Amplification Testing (NAAT)



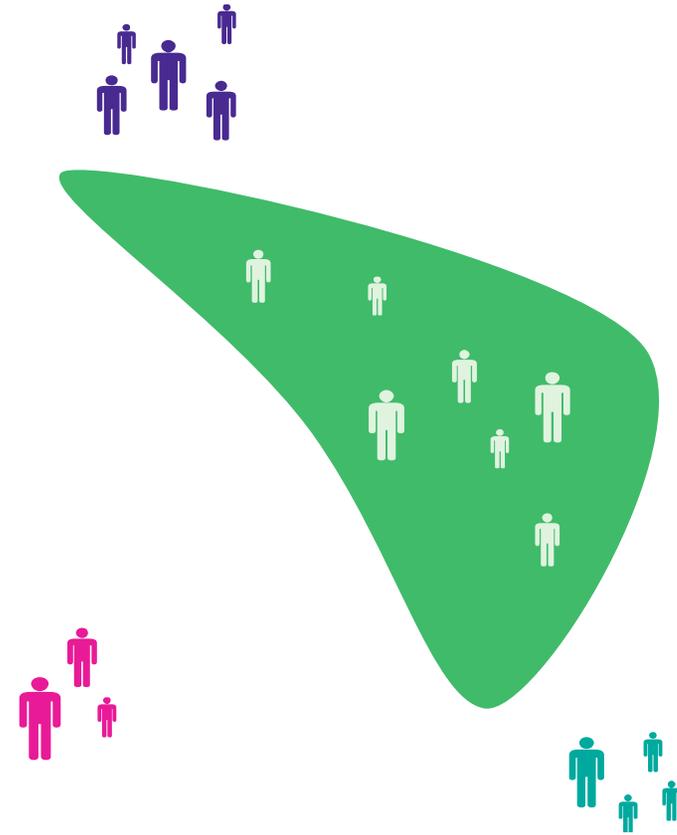
Pool resolution requires approximately 3 days



# Window period of pooled NAAT



# Impact of pooled NAAT among gay men in Vancouver





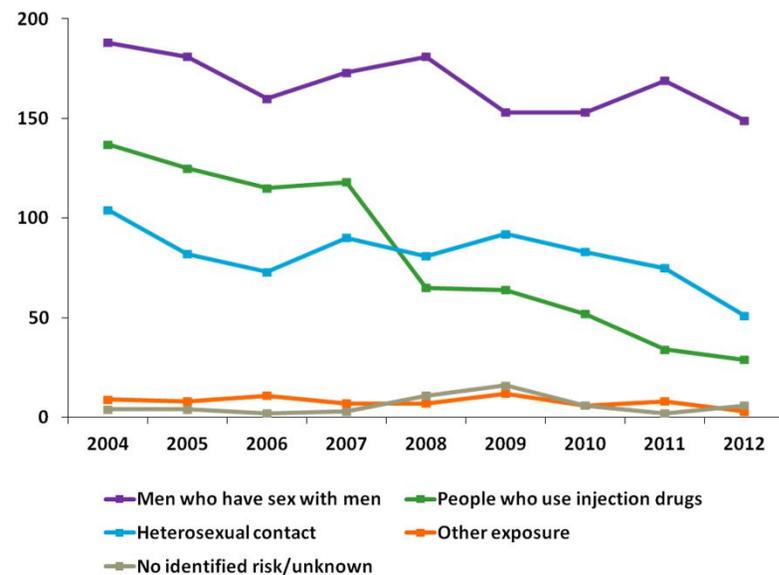
# What was going on in 2009

## ■ What we knew:

- Viral load and risk of transmission, probability of TasP (pre- HPTN 032)
- Potential for clinical and public health benefit if diagnosed during acute infection
- Pooled NAAT had worked in other places (North Carolina) and that targeted approaches were likely most cost-effective

## ■ Why target gay men?

- Greatest number of new HIV diagnoses
- Between 2006-2008, MSM were more likely to be diagnosed with acute HIV infection



For more information see:

Steinberg M et al. [Towards targeted screening for acute HIV infections in BC.](#) (2011)

New HIV diagnoses, BC Centre for Disease Control (2013)



## How pooled NAAT was targeted

- Pooled NAAT was implemented at 6 clinics accessed by gay men in Vancouver in April 2009
  - Selection of sites based on reviewing where new HIV diagnoses were occurring, and consulting with community organizations and clinicians
  - Education sessions were held with clinicians at the 6 clinics to increase their awareness of acute HIV infection and explain pooled NAAT
  
- Blood specimens from these clinics were sent the BC Public Health Laboratory and routinely tested by pooled NAAT if:
  - The initial antibody screening test was negative
  - On requisition listed as Male, Transgendered or unknown gender
  - Age listed as > 18 years



# Maximizing the prevention benefit

- Needed to minimize the time from specimen collection to receipt of result
  - On average, pooled NAAT had a turn-around time (collection to result) of 4 days (+ 1 day to resolve a positive pool)
- Acute HIV test results were prioritized for public health follow-up (“public health emergency”)



# What was the impact on HIV diagnoses?

Comparing 3 years pre and post implementation

Outcome	Pre-Pooling (5 sites) (Apr 2006 – Mar 2009)		Post-Pooling (5 sites) (Apr 2009 – Mar 2012)		All Sites (6 sites) (Apr 2009-Mar 2012)	
	N	Rate	N	Rate	N	Rate
Individuals tested	18,393	---	20,141	---	21,967	---
Diagnosed with HIV (Total)	218	11.85	176	8.74*	217	9.88
Diagnosed with Acute HIV	19	1.03	37	1.84**	54	2.46

Rate per 1,000 persons tested. \*p=0.003 \*\*p=0.053



**25 (46%)** were detected by pooled NAAT only and would otherwise have received a negative result

**12% increase** in new HIV diagnoses after implementing pooled NAAT

For more information see:

Gilbert M et al. Targeting screening and social marketing to increase detection of acute HIV infection in MSM in Vancouver, BC (2013). [Article](#) and [Fact Sheet](#)



**Pooled.... what?**



*[\(photo credit\)](#)*



# The Early Test – First campaign

**WHAT ARE YOU WAITING FOR**

**RAPID HIV TESTING**  
RESULTS IN A MINUTE

and

**EARLY HIV TESTING**  
TEST 2 WEEKS AFTER RISK

[whatRUwaiting4.ca](http://whatRUwaiting4.ca)

**HIM** HEALTH INITIATIVE FOR MEN  
HIM is dedicated to strengthening the health and well being of all gay men. Our vision of health encompasses physical, mental, spiritual and social aspects of gay men's lives  
[www.checkhimout.ca](http://www.checkhimout.ca)

**HIM** HEALTH INITIATIVE FOR MEN  
[www.checkhimout.ca](http://www.checkhimout.ca)

- Dec 2009-Feb 2010
- Aimed to raise awareness of two new test options:
  - Point of care testing (the “rapid” test – results in a minute)
  - Pooled NAAT testing (the “early HIV test” – test two weeks after risk)

[\(campaign website\)](#)



# The Early Test – Second campaign

**IT'S HOTTEST AT THE START**

During the first couple of months after infection, HIV is a powerhouse in the sack. In this early "acute" stage of HIV, it is much easier to pass on the virus.

If you fuck without condoms and aren't completely sure of your partner's HIV status, get tested.

Now you can get an accurate HIV test within 10 days of risky sex.

Learn more at [checkhimout.ca/acutehiv](http://checkhimout.ca/acutehiv)

**HiM** | HEALTH INITIATIVE FOR MEN  
[www.checkhimout.ca](http://www.checkhimout.ca)

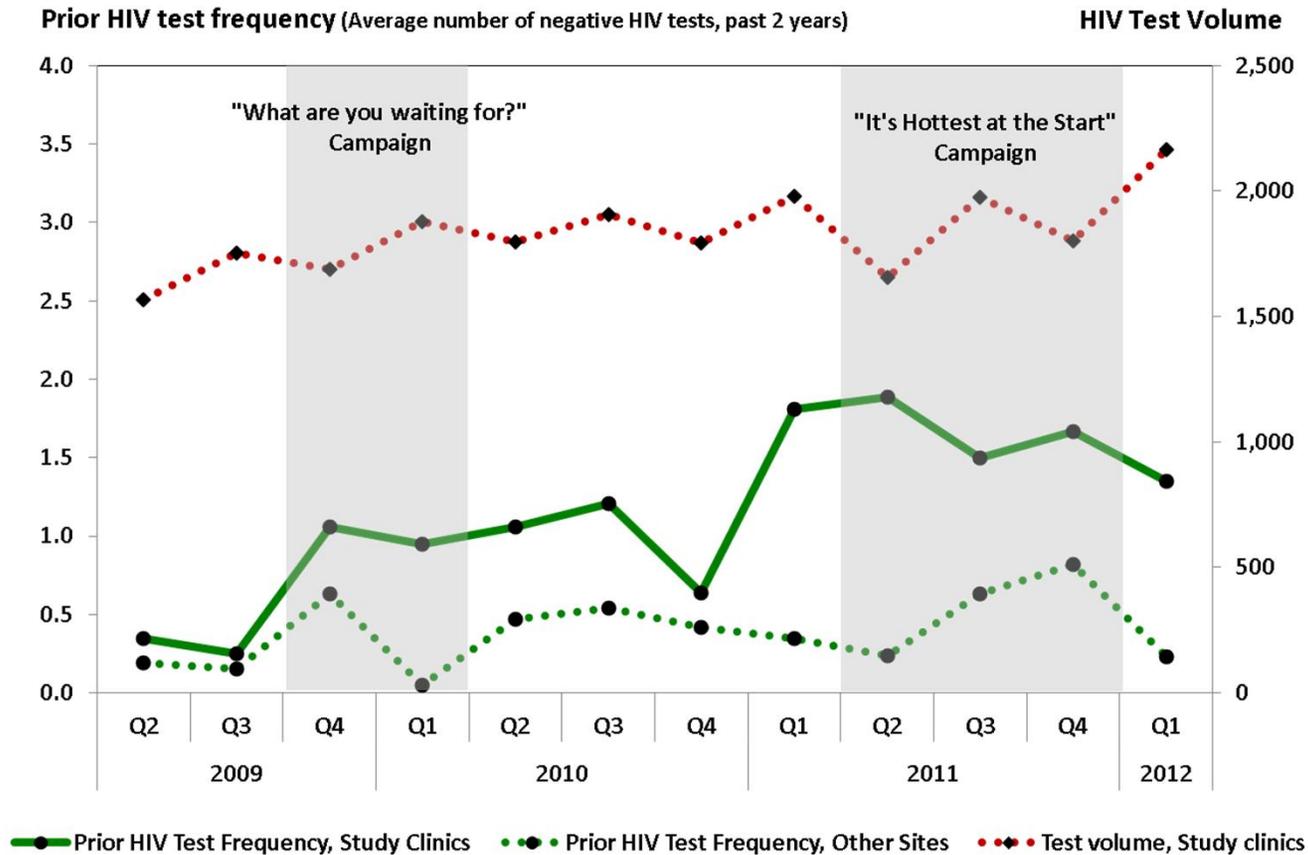
- July 2011-Sept 2011
- Aimed to raise awareness of the importance of acute infection and increase in viral load
  - Tied to getting the “early” test after risky sex or starting a new relationship

[\(campaign website\)](#)



# Did the campaigns work?

HIV diagnoses, tests, and test frequency after pooled NAAT implemented



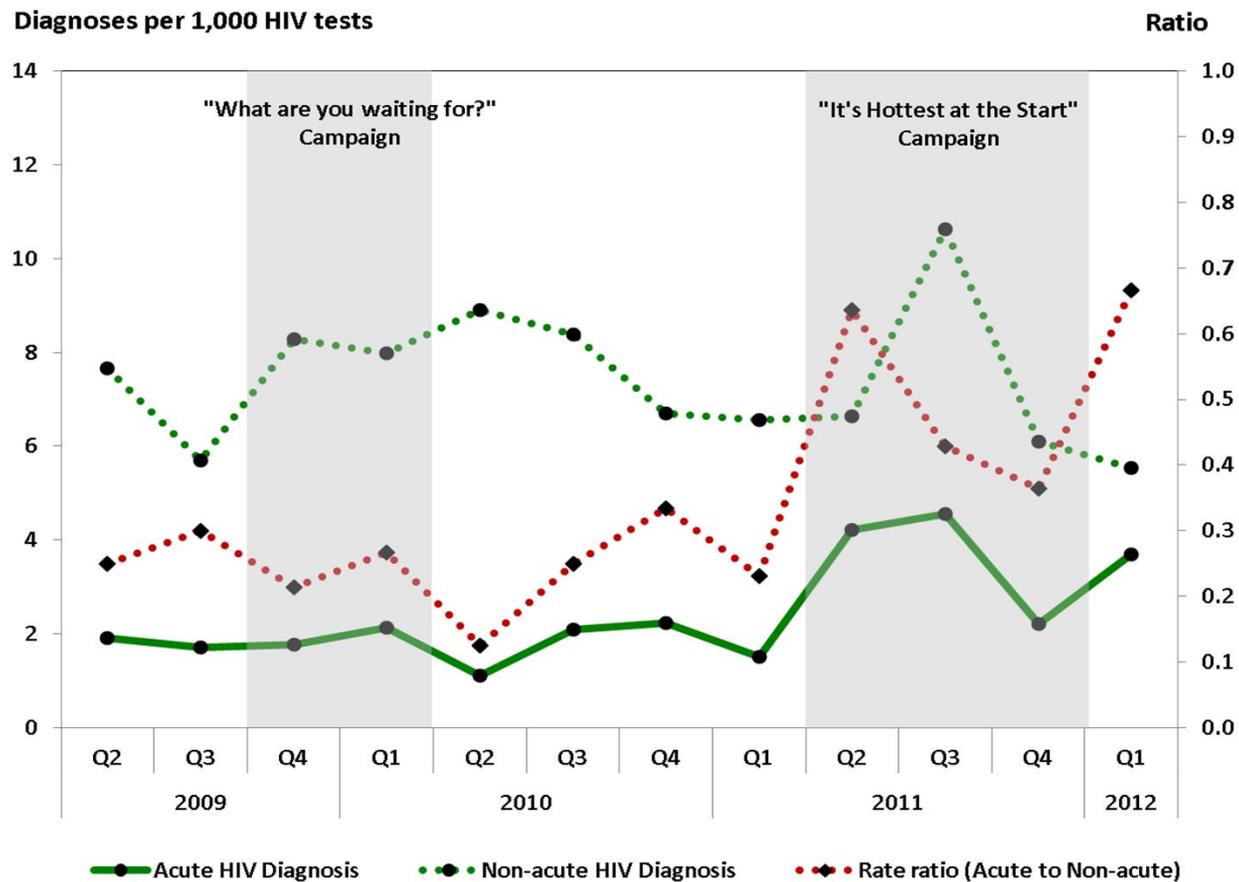
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# Did the campaigns work?

HIV diagnoses, tests, and test frequency after pooled NAAT implemented

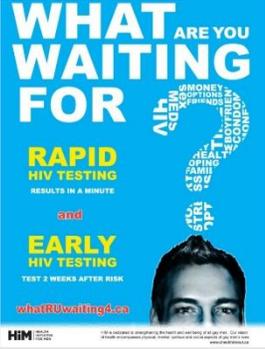


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# The campaigns worked!

	Recognized the campaign images	Talked about campaign with friends
 <p><b>WHAT ARE YOU WAITING FOR</b> RAPID HIV TESTING RESULTS IN A MINUTE and EARLY HIV TESTING TEST 2 WEEKS AFTER RISK whatRWaiting.co</p>	Venue-based and online survey of 599 gay men (March-May 2010)	36% 32%
 <p><b>IT'S HOTTEST AT THE START</b> During the first couple of months of infection, HIV is more transmissible in the body, in that early "acute" stage of HIV, it is much easier to pass on the virus. If you back without condoms and aren't consistently using your partner's HIV status, you could be at risk. Now you can get an accurate HIV test within 10 days of risky sex.</p>	HIV negative cohort 166 gay men* (Jan-Sept 2012)  *tested at HIM clinic	95% 54%



# High awareness of the Early test

HIV negative cohort (n=164)

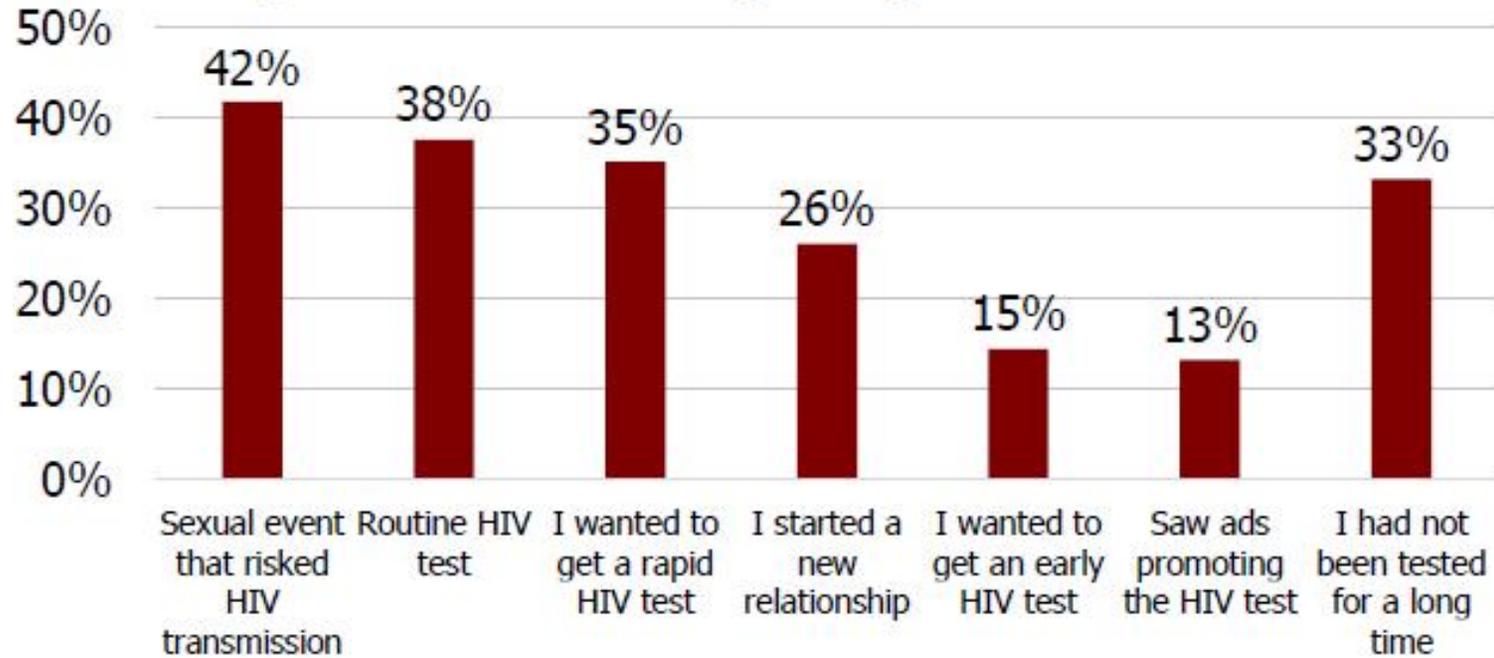
- 74% heard of early test
- Heard from:
  - Gay friends (37%)
  - Sex partners (9%)
  - Ad campaign (38%)
- Of those that heard:
  - 53% told sex partners about the early test
  - 66% told gay friends

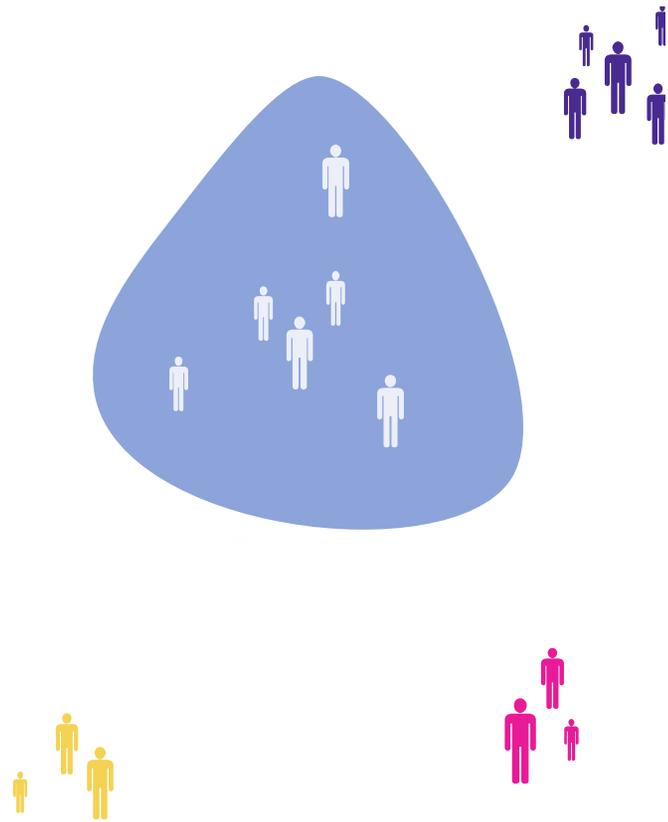




# Reason for most recent HIV test

HIV negative cohort (n=164)



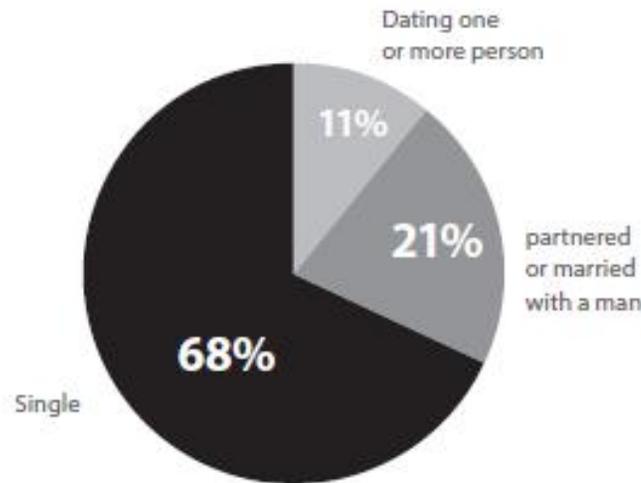
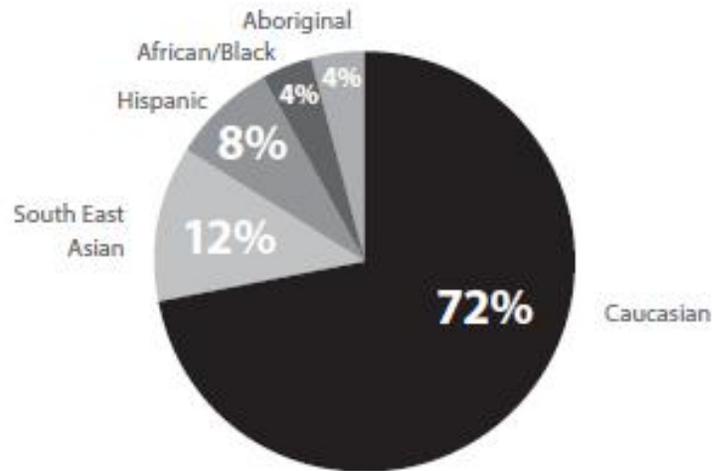


# Qualitative Study Findings



# HIV positive cohort

25 men



Mean age



Live in the Greater Vancouver Region



Identify as gay

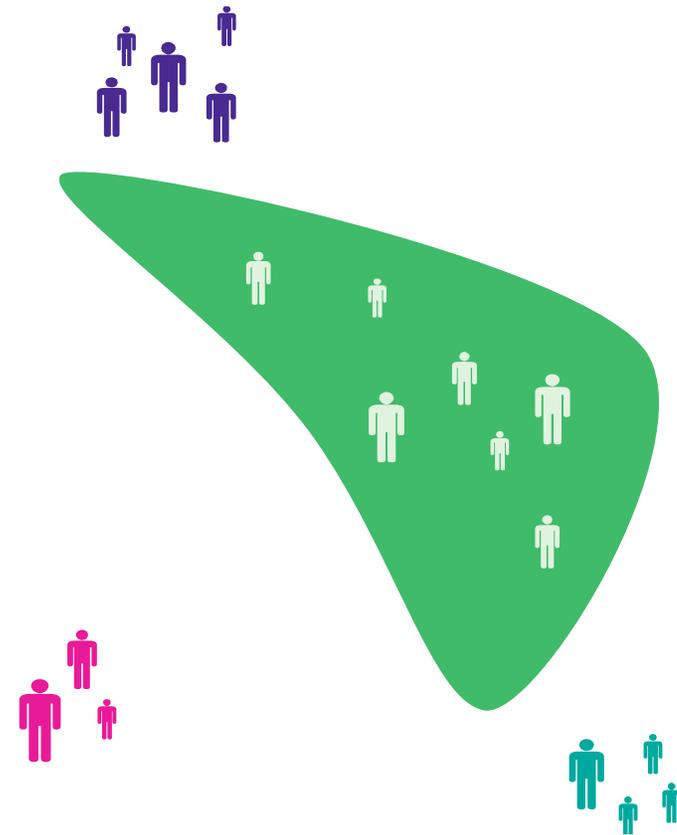


Employed full-time



Completed university

# Diagnosis experiences & significance of acute HIV infection



Grace, D., Steinberg, M., Kwag, M., Chown, S. A., Doupe, G., Trussler, T., Rekart, M. & Gilbert, M. (2015). Diagnostic Technologies in Practice Gay Men's Narratives of Acute or Recent HIV Infection Diagnosis. *Qualitative Health Research*, 25(2), 205-217. [article](#) [blog post](#)



## Delivery of results via phone

- Phone calls from clinicians were an indicator of HIV-positive test results:
  - *But at that moment I knew something was wrong [...] I said, like, you know what? I think I'm positive. Most likely.*  
(31 years old, acute HIV infection)
- Receiving results via phone in unexpected circumstances was challenging:
  - *I was in the supply room, and I had to go back to the front desk and do my job.*  
(45 years old, recent HIV infection)





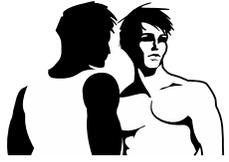
## Delivery of results in clinical settings

- Overwhelmingly, participants received strong support from clinicians:
  - *I was treated with a lot of respect, with a lot of love and a lot of compassion. I think compassion is a main word. So, no, I would say I wouldn't change anything.*  
(32 years old, acute HIV infection)
- Some participants reported being relieved once an official diagnosis was given:
  - *In a way, I felt relieved, because at least I knew and at least the uncertainty was over. So now there was, like, a game plan we could follow to get on with my life.*  
(44 years old, acute HIV infection)



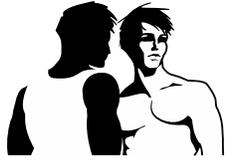
## Uncertainty about HIV test results

- Some participants perceived clinicians to be uncertain about acute HIV test results:
  - *Everything was good until he got to the HIV test and he looked very puzzled because the results were confusing or conflicting and the results came back negative. However, there was uh, one other, blood screen test which is very new, was the early detection. When I met, showed the presence of antibodies, so, he didn't seem too concerned about it, um, and I wasn't either cause he was saying that there you know, could be false [positive] [...] But then I got a phone call from him [...] And he said that there was the possibility of an early infection. That he wanted me to do more blood work, uh, the next day. Uh, so I was very concerned and very upset at that point. Uh, confused and uh, didn't know what to make of it. (55 years old, acute HIV infection)*



# Uncertainty about acute HIV infection

- Participants had varying levels of knowledge about acute infection before diagnosis
- Some participants were confused about the meaning of acute HIV infection:
  - *At that point I still wasn't exactly sure what acutely infected meant. I know it's a high viral load, which means the virus was extremely, you know, high. My immune system was extremely low, obviously. So I was just worried about getting sick with a flu or something. [...] I was just confused, you know. I didn't really know, understand what exactly my stage was, and you know, I was just kind of worried about it.*  
(21 years old, acute HIV infection)



## "HIV is HIV": Relationship to identity formation

- Acute diagnosis had very little impact on the ways most participants viewed themselves as HIV-positive men:
  - *I don't know, before, when I was negative, being positive is positive. Either acute or they're not acute. Many people don't know about this phase, so it's just the fact that you are positive. Like, I don't know, before if somebody said, like, okay, I'm positive, but my viral load is undetectable, or someone is, like, oh, I'm positive but my viral load is half a million, to me, you're positive, period.*  
(31 years old, acute HIV infection)





## Relationship to starting treatment

- High viral loads was a motivating factor for some participants in starting treatment immediately:
  - *I think it was because my counts went so high, and my CD4s dropped so low, whether they thought they were going to come back up or not, but they just decided to, say, “Go on it right away.” And, I mean, you know, the way that I am right now, I’m undetectable, and my CD4s are up, at this point, I expect to find them somewhere between 350 and 450 at this point. You know, from a low of 250, when they took the first one. But they were already up at 350 by the time I got my second test results, after a month on the medication, three weeks on the medication, so.*  
(64 years old, acute HIV infection)



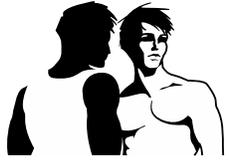
## Immediate period after diagnosis

- After diagnosis, participants reported reduced sexual activity during the acute phase of their infection
- Some discussed being told they should stop having sex for a period because they were “*Highly, highly contagious.*”
- Many reported that provider explained significance of acute diagnosis in relation to need to be cautious when engaging in sexual activity
  - *Well, it definitely made me terrified of having sex at all, because I know how infectious one is in that early stage. So it just definitely just made me completely step back from sex for awhile. (30 years old, acute HIV infection)*

# Becoming “undetectable”

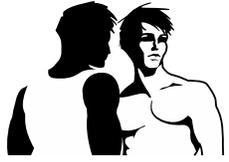


Grace, D., Chown, S. A., Kwag, M., Steinberg, M., Lim, E., & Gilbert, M. (2015). Becoming “Undetectable”: Longitudinal Narratives of Gay Men’s Sex Lives After a Recent HIV Diagnosis. *AIDS Education and Prevention*, 27(4), 333-349.



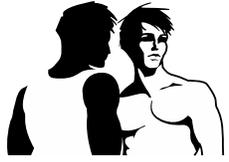
## Significance of becoming “undetectable”

- Some men described the multiple sexual, emotional and psychological benefits to continued use of HIV treatment
  - *Once the doctor says to you that you are undetectable and you are, like, well on your way, and when you find out that you are this healthy, I mean, how do you go wrong? Where do you go wrong with that? Do you know what I mean? You feel like, “Okay, I can live again. I can go date guys.”...So mentally and emotionally, in so many different ways it relieves that block knowing, okay, I can tell you I am HIV positive, but I am undetectable which means it’s a lot harder to get it from me.*  
(41 years old, recent HIV infection, T2)



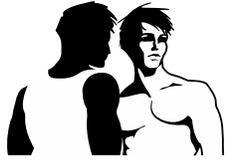
## Significance of becoming “undetectable”

- Participants reported additional impacts resulting from the knowledge of their undetectable HIV status beyond solely sexual activity:
  - *[Having an undetectable viral load] was the milestone of, number one, accepting that I actually have this condition and number two, taking proactive steps to manage it. [...] In a very vague sort of way, you could sort of say that being undetectable means I am normal again.*  
(46 years old, acute HIV infection, T4)



## Significance of becoming “undetectable”

- Some participants reported continued sexual caution regarding how to interpret being told they now “can’t pass it [HIV] on” when having condomless sex:
  - *The whole me not blowing my load into someone, that’s, I just think that’s a mental block, I don’t know why, like I know being undetectable, again, they’re telling me, this is what they tell me is that I can’t pass it on. So that should tell me that I can even blow my load into someone and not pass it on. But it’s just, I think that’s a mental block with me, that I just could be a one in a billion thing, I don’t want, you know I just want to, I feel that maybe not having my semen sitting in their guts may be safer, I don’t know, I just, I don’t know, it’s just a mental block with that. So yeah, that’s that.*  
(25 years old, acute HIV infection, T4)

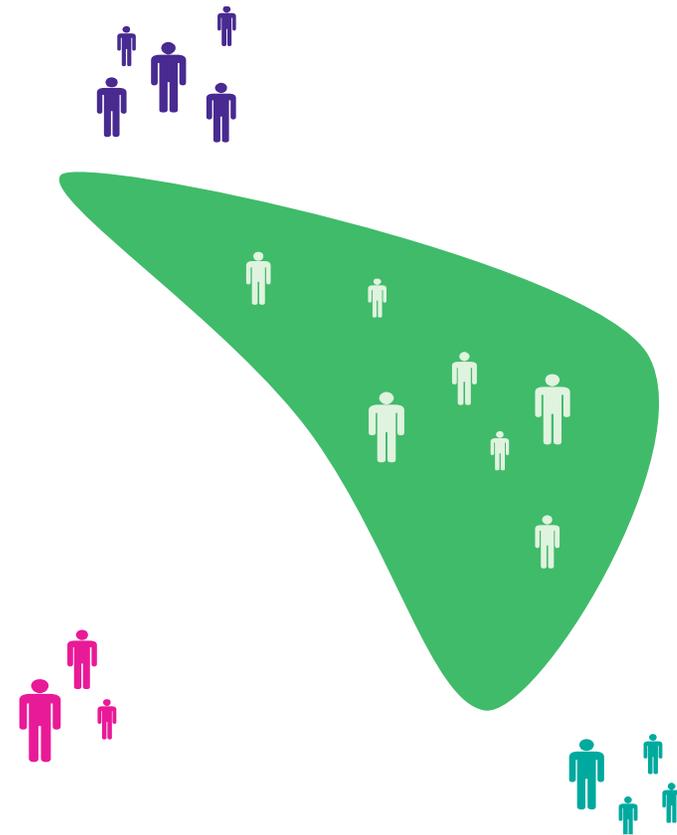


# Significance of becoming “undetectable”

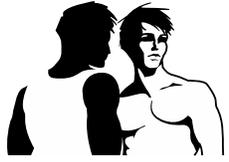
- Men discussed “undetectability” as an identity category online and in-person
  - *....most guys, they put ‘undetectable’, actually, instead of that they’re ‘positive’.*  
(35 years old, recent HIV infection, T4)
  - *And some [HIV negative gay men] are fine with positive, and [they] say, you know, “Are you undetectable?” And [I] say no. And, “Oh, when do you start treatment?” “Well, I haven’t.” And that’s it. And sometimes that shuts down.*  
(32 years old, acute HIV infection, T2)



# HIV-negative gay men's understanding of sexual safety without condoms



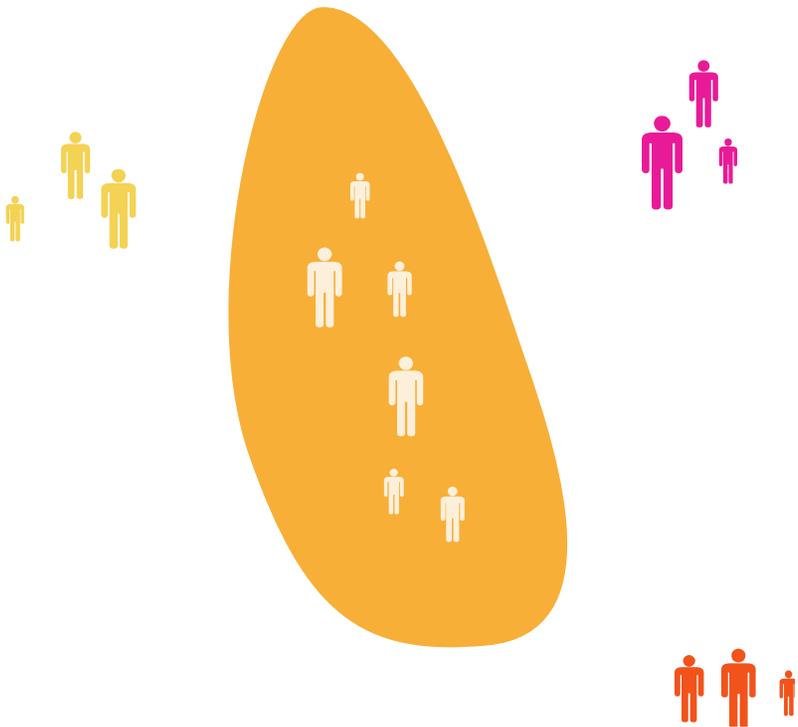
Grace, D., Chown, S. A., Jollimore, J., Parry, R., Kwag, M., Steinberg, M., Trussler, T., Rekart, M., & Gilbert, M. (2014). HIV-negative gay men's accounts of using context-dependent sero-adaptive strategies. *Culture, Health & Sexuality*, 16(3), 316-330. [article fact sheet](#)



# HIV-negative gay men's understanding of sexual safety without condoms

- Many participants said they did not have enough information about having sex with positive partners:
  - *So, I guess I am knowledgeable in that, you know, I have - I know that high viral load is bad news. Low viral load could be good news, but I'm not positive as to how safe exactly a low viral load is. (29 years old, HIV-negative)*
  - *I feel like there is not enough information, very solid information, on which everybody agrees, to make a decision that, yeah, if somebody has a very low viral load and if I'm going to make a decision to have unsafe sex with them, as if they are negative, yeah. (27 years old, HIV-negative)*

# Take home messages





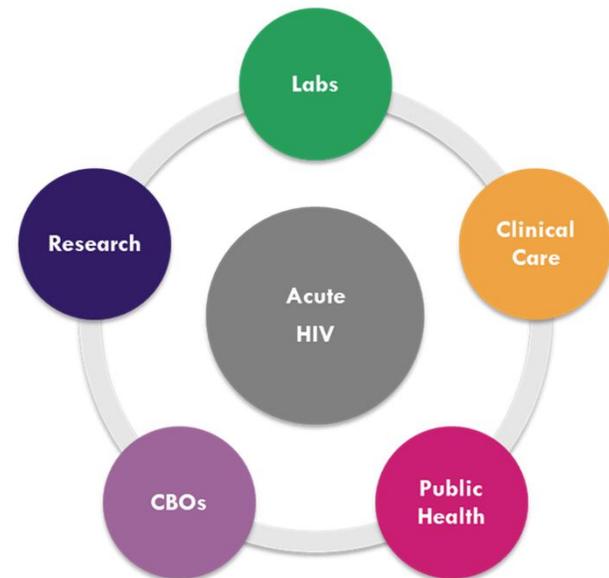
## Learning from lived experience

- Importance of pooled NAAT as public health intervention
- Knowledgeable were in period of high viral load
- Some reported uncertainty as to the meaning of “acute infection”
- Learned from the early experiences of implementing NAAT
- Significance of acute HIV infection diagnosis understood in relation to how fast could start treatment, bring down viral loads, and become undetectable
- Becoming undetectable significant “milestone” for multiple physical, sexual and psychological reasons



# Implementing a new test technology

- Partnerships are critically important
- Target the test for the most impact
- Determine the advantage of the test and sell it
- Promotion is not a one-off event
- The test isn't happening in a vacuum
- Know that word gets around
- Educate providers about the test
- Evaluation is key





# Questions?

- **Special thanks to:**
  - Sarah Chown, Jody Jollimore, Michael Kwag, Malcolm Steinberg
  - All the Team Grant Members
  - All our participants
  
- **For more information:**  
[www.acutehivstudy.com/findings.html](http://www.acutehivstudy.com/findings.html)
  
- **Or contact us:**  
[mgilbert@ohsn.on.ca](mailto:mgilbert@ohsn.on.ca)  
[daniel.grace@utoronto.ca](mailto:daniel.grace@utoronto.ca)

