

# The "testing gap": Prevalence and characteristics of MSM who have not tested for HIV since their last episode of unprotected casual sex

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## Introduction

To reduce HIV incidence, "Treatment as Prevention" (TasP) relies on timely HIV diagnosis. The optimum goal is to identify recently acquired infections – ideally individuals in the acute phase of high viral load and infectivity – and intervene before secondary HIV transmission occurs. The feasibility of this is influenced both by **patterns of HIV testing**, and by **patterns of exposure**.

In the context of TasP, a **"testing gap"** can be thought of as a space created when HIV testing has not happened after an episode of unprotected casual sex. For example, a previous HIV negative test becomes outdated after unprotected casual sex. Similarly, never tested individuals who have engaged in unprotected casual sex cannot confirm their current HIV status.

The "testing gap" is particularly relevant for populations of men who have sex with men (MSM). Although MSM report higher rates of condom use than do heterosexual populations, and higher rates of HIV testing, MSM networks are also characterised by greater rates of sexual partner change. A better understanding of the combined effect of partner change frequency, frequency of possible exposure during anal intercourse, and HIV testing frequency would help assess the challenges of TasP implementation with MSM communities worldwide.

We aimed to describe the size and characteristics of the "testing gap" among MSM, and examine the characteristics of MSM who have not tested for HIV since their last unprotected casual sex event.

## Methods

Location-based and web-based HIV behavioural surveys in Auckland, New Zealand collected anonymous self-completed questionnaires in 2006, 2008 and 2011 at community venues and on an internet dating website. Methods are described elsewhere [1]. Eligibility was being male at least 16 years old and had sex with a man in the past five years. Confirmed positive respondents were excluded from analyses.

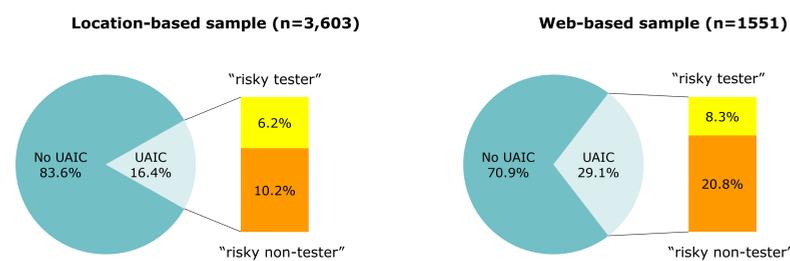
Using partnering, condom use and HIV testing data we identified two categories of respondents, "risky non-testers" and "risky testers":

- **"risky testers"**
  - engaged in unprotected anal intercourse with a casual partner within six months prior to survey (UAIC)
  - had their last negative test within the prior six months
- **"risky non-testers"**
  - engaged in unprotected anal intercourse with a casual partner within six months prior to survey (UAIC)
  - had either (a) never tested for HIV, or (b) their last negative HIV test was more than six months ago

We examined trends in "risky non-testing" over time and compared the characteristics of these respondents with "risky testers".

## Results

Overall 3,603 MSM participated in location-based surveys and 1,551 in web-based surveys. Of these, 590 and 452 respondents respectively reported any UAIC in the six months prior to survey.



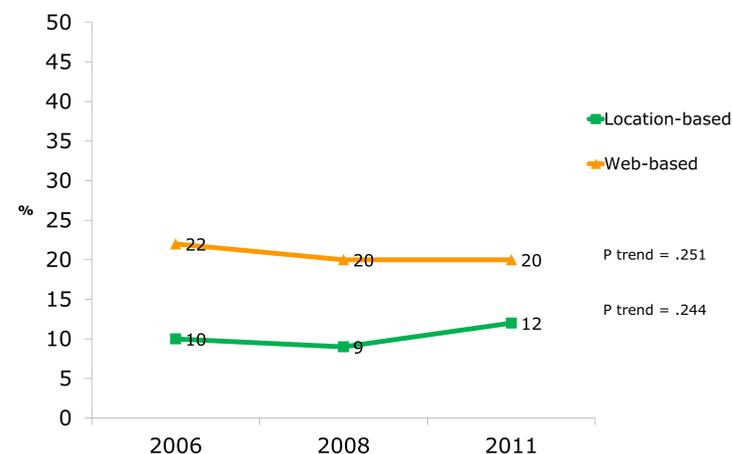
**Fig.1 Proportion "risky non-tester" MSM in 2006-2011 surveys**

Fig. 1 shows that 1 in 10 (10.2%) respondents from location-based surveys and 1 in 5 (20.8%) from web-based surveys were identified as "risky non-testers". This represents the majority (62% in location-based surveys, 72% in web-based surveys) of those who had engaged in any UAIC in the six months prior to survey.

The higher proportion (20.8%) identified in the web-based surveys compared to the location-based surveys (10.2%) is influenced by a number of factors in the former respondents. These include:

- a higher proportion having casual sex
- a higher proportion of those having casual sex engaging in any UAIC
- a lower proportion reporting an HIV test, or a recent HIV test

The proportion being "risky non-testers" remained stable overall between 2006-2011 (Fig. 2). This was true even though rates of recent HIV testing in these surveys have increased 2006-2011. For example, the proportionate increase in "risky non-testers" seen among location-based respondents in 2011 was due to a rise in anal intercourse and a drop in condom use.



**Fig.2 Proportion identified as "risky non-tester" by survey**

**Table 1. Comparison of "risky testers" and "risky non-testers" among those engaging in UAIC, 2006-2011 (n=1042)**

	% of "Risky testers"	% of "Risky non-testers"	Chi <sup>2</sup> p
<i>Socio-demographics</i>			
Recruited via online dating site	37	47	.005
Aged <30	45	39	ns
European ethnicity	73	69	.044
Post-secondary school education	67	65	ns
Gay identified	84	76	.004
<i>Sexual partnering</i>			
>20 male partners <6 months	26	19	.009
<i>HIV &amp; STI testing</i>			
Current HIV status belief "definitely negative"	63	40	<.001
STI checkup/treatment <12 months	86	36	<.001
Diagnosed with STI <12 months	27	11	<.001
<i>Attitudes (strongly agree/agree)</i>			
"Condoms are ok as part of sex"	92	90	ns
"HIV is a less seriously threat"	26	29	ns
"Some times I'd rather risk HIV than use a condom"	34	28	ns
"I don't like condoms because they reduce sensitivity"	64	58	.040
"A man who knows he has HIV would tell me before sex"	31	42	.001

Compared to "risky testers" (i.e. MSM who had engaged in UAIC in the previous six months and tested for HIV within this period), "risky non-testers" had fewer recent partners and were less likely to have had a recent sexual health checkup (Table 1). Correspondingly, they were less likely to be sure they were HIV negative at the time of survey, but were also less likely to have had an STI diagnosed.

"Risky non-testers" were slightly older, more bisexually identified, of Asian or Pacific identity, and to have been recruited from Internet dating sites compared to "risky testers" (Table 1). Attitudes were similar, although "risky non-testers" were more likely to expect HIV disclosure from a sexual partner who knew they had HIV.

## Conclusions

**A considerable proportion of MSM engage in rates of UAIC that outpaces their HIV testing frequency. This has implications for the likely effectiveness of TasP for MSM populations.**

Our measure of "risky non-tester" underestimates the true proportion, because we only included UAIC events occurring in the six months prior to survey, and because we could not identify the sequence for those MSM engaging in UAIC and testing in the last six months.

In addition to being less certain of their current HIV status, "risky non-testers" may have high rate of undiagnosed STIs. Both HIV and sexual health services should be more accessible to certain MSM who are disproportionately represented, including MSM using Internet dating sites, identifying as bisexual, and of minority ethnicities.

## References

[1] Saxton P, Dickson N, Hughes A. "Who is omitted from repeated offline HIV behavioural surveillance among MSM? Implications for interpreting trends. *AIDS and Behavior*. 2013; 17: 3133-3144.