

# A study of delivery of HIV self-test (HIVST) through internet-based channel with online targeted promotion among key populations in Hong Kong

## Background

Department of Health (DH) has conducted a feasibility study of using a web-based ordering and result upload of HIV self-test utilizing oral fluid-based specimen and targeting local MSM from September 2019 to June 2020.<sup>1</sup> In view of the good response of previous HIV self-test study, DH extended the study to include local transgender women (TGW) as target populations in the second phase of study with enhanced online promotion.

## Methods

A designated website<sup>2</sup> was launched for online recruitment and test kit ordering from 28 December 2020 to 31 December 2021 (1 year). An oral fluid-based HIVST kit (OraQuick®) and a blood-based HIVST kit (autotest VIH®) were available for purchase through the website, both were prequalified by the World Health Organization (WHO). Any adult (aged 18 or above) who ever had oral, vaginal or anal sex and possess a valid local mobile phone number was eligible for the study. While the main targets of this study were MSM and TGW, the investigator would not deter heterosexual men/female from ordering the test kits.

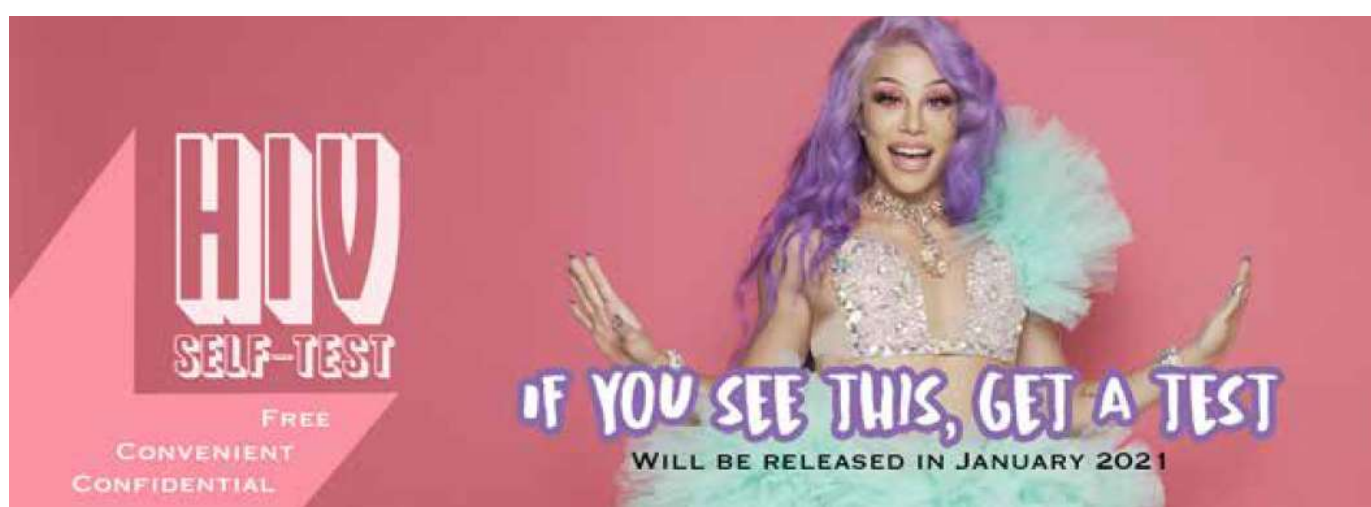
The participants ordered the test kit from the study website in which no personal information was required to place an order. Nevertheless, the participant needed to fill in a questionnaire and picked a spot to collect the test kit. The participant paid HK\$130 for the kit through e-payment which would be reimbursed upon result upload within 14 days after ordering. Different from the first phase of the study, photo upload was not required for verification of results by DH. Participants who were tested positive or had any query could leave their contact phone number and confirmatory test and counselling would be arranged by DH staff if indicated. Another test kit will be offered with waived delivery charge if invalid result was found.



## Promotions

A series of advertising materials targeting MSM and TGW, including posters and short animations were produced to promote the study. In addition to regular DH websites and social media platforms, nine local key opinion leaders (KOLs) and 7 local LGBT organisations (non-KOL channels) were invited to promote the study in their social media

platforms (Facebook, Instagram, Youtube). Seven KOLs were MSM and the remaining were transgender people. In general, a promotion cycle of most channels was 4 weeks except for 3 channels which had two promotion cycles. Each channel was provided with a unique hyperlink and the click count of individual posts/links was recorded throughout the study period.



### Key findings

- **Basic demographics:** A total of 1,169 test kits were ordered. After de-duplicating subjects who had reordered the kits more than once within the study period, the actual number of subjects recruited was 959, of which 788 (82.2%) were self-reported MSM and 4 (0.4%) were self-reported transgender women. The remaining subjects consisted of heterosexual men (9.1%), heterosexual women (7.6%), transgender men (0.6%) and lesbian (0.1%). A majority (87.1%) of the MSM subjects were aged between 20-39 years old while the remaining 9.6%

were aged 40 or above. 97.2% of the participants reported their ethnicity as Chinese. All of the TGW subjects were aged between 20-39 years old, and 75% reported their ethnicity as Chinese.

- Source of information about the study: Among the first-order participants who did not join the previous HIVST study (n=724), 363 (50.1%) of them reported to have received information about this study from online promotion, 209 (28.9%) received information from friends, and 168 (23.2%) found information from search engine (e.g. Google or Yahoo).
- Promotion channels: There were a total of 5,466 and 17,577 clicks generated from KOLs and non-KOL channels respectively during the study period. The promotion cost used for online advertising (excluded the production cost and honorarium received by the parties) were \$51,508 and \$46,793 respectively, from both 112 orders of test kits were received. Despite the cost and number of reach/impressions as recorded by social media platforms were similar among KOL and non-KOL channels, the engagement rate, which represent any interaction with the audience, were greatly different in the 2 groups. It was also observed that the effect of promotion via KOL had "extended effects" beyond the promotion period. When comparing the two groups, engagement rate in KOL channels were higher (21.7%) than non-KOL (5.2%) hence the cost incurred per engagement was lower in KOL group. However, when comparing the actual HIVST website visit, the cost of KOL group was around 4 times higher than non-KOL group, despite their total number of reach/impression were similar. Finally, the cost per test kit order was only slightly higher in KOL group.

Promotion effect and cost	KOL	Non-KOL
Engagement rate <sup>^</sup> in social media	21.7%	5.2%
Extended effect (total number of clicks during whole study period/ clicks in promotion period)	127%	104%
Cost per engagement	\$0.6	\$2.46
Cost per study website visit (whole study period)	\$9.42	\$2.66
Cost per study website visit (promotion period)	\$11.93	\$2.78
Cost per test kit order (MSM only)	\$459.9	\$417.8

<sup>^</sup> The engagement rate was defined as number of clicks/views (interactions) divided by number of reach/impression.

- Repeat ordering: Among the 1,169 test kits ordered, the number of kits ordered by MSM and TGW participants were 986 and 4 respectively. The participants were allowed to repeat order test kit every 3 months. The percentage of placing one, two, three and four orders (kits) during the study period among MSM in the study period were 79.9%, 15.9%, 3.8% and 0.4% respectively. Other than MSM, other groups rarely ordered test kit more than once during the period. Overall, more than half (63.9%) of the first ordered test kits were oral fluid-based.
- Condom use rates: Among MSM participants (n=788), 87.6% were homosexuals while remaining were bisexuals/pansexuals. 83.9% reported having sex with men in the previous 3 months as at the time of placing the first order, the rate of consistent (100%) condom use with men among all MSM was 38.0% while 74.6% of them used condoms in 50% or more sex episodes with men. The consistent and >50% condom use rates among bisexual/pansexual MSM were statistically significant lower than homosexual MSM.

Condom use rates	Homosexual MSM	Bisexual/pansexual MSM
Consistent (100%) condom use with men	228 (39.4%)	20 (26.7%)
50% or above condom use with men	439 (76.0%)	48 (64.0%)
Total number of sex with men within past 3 months (653)	578	75

Among TGW participants, all of them had sex with men while half of them also had sex with other genders. During the past 3 months, half of them had sex with men and they are all consistently using condom when sex and did not have sex with other genders.

- HIV testing behaviours: Among MSM participants, as high as 20.8% were “first time tester” when they joined this study, in contrast to the first phase of study which could attract 30.8% of “first time tester”. The ever-testing rate (79.2%) was higher compared with the previous HIVST study in 2019 (69.2%). The testing rate in the past 12 months was also higher (58.6%) compared with the previous HIVST study in 2019 (42.1%). A very high proportion of MSM participants (92.1%) reported that they would increase HIV testing frequency in the future. Among TGW participants, as high as 75% were “first time tester” when they joined this study. The remaining one subject had last HIV test done in 4 to 6 months ago.
- Testing results: Among all participants, 10 positive results (7 from oral fluid sample and 3 blood sample) were reported. The positivity rate was 0.9%. 9 positive cases were MSM and the remaining one was heterosexual man. Among them, 4 of them left their phone number for DH to contact and refer for confirmation test (confirmation test result were 2 positive and 2 negative). There was one additional positive case who approached DH’s AIDS Counselling and Testing Service (ACTS) for further confirmatory testing himself without uploading his testing result. There were altogether 3 confirmed positive cases verified by ACTS. The remaining 6 cases who reported to have positive results did not leave their contact information.
- Users’ experiences: Provided with clear written and audiovisual instructions for use, 93.3% of all testing episodes could perform the tests by themselves without any technical assistance needed in using the test kit, 94.3% did not need assistant in result interpretation and 95.8% did not require emotional support during the process. There was no report of social harm and adverse event during the study period. Majority of participants provided positive feedback to the project with satisfaction.

## Discussions

1. From the two phases of study, HIV self-test was found to be well-accepted by local MSM community as reflected by the satisfaction rate from the participants. Despite the increasing awareness and use of HIVST as revealed from previous surveys (HARIS) and the two phases HIVST study spanning over nearly 2 years, there was still 20.8% identified as “first-time tester” among MSM participants from this study. There was still room for further promotion of HIVST among key populations.
2. Overall, oral fluid HIV self-test was more favourable by participant in first order (63.9%). 86.4% (146 out of 169) of participants ordered more than once only chose one type of test kit throughout the study period. Qualitative study to explore the user experience among different key communities could provide more information to further improve the programme which could better suit their needs.

3. In this study, the consistent condom use rate and 50% or above condom use rate among bisexual/pansexual MSM were statistically significant lower than homosexual MSM. However, repeat ordering (ordering more than once during the study period) of HIVST was found not associated with behavioural change in condom use among the MSM participants within the study period.
4. It was found that KOL promotion effects could generally last longer and there were extended effects with additional clicks/views beyond the promotion period. Despite lower click rates to study website generated from KOL channels, the cost incurred per test kit order was relatively similar when compared to non-KOL channels (\$459.9 vs. \$417.8). In general targeted online promotion could better reach at-risk populations, while KOL promotion might provide branding effect as revealed by a higher engagement rate.

## Conclusion

This study was first of its kind in Hong Kong to generate useful information to guide online promotion strategies of HIVST targeting key populations. Identification of new cases could be cost-saving to avert HIV transmissions and save lifetime HIV treatment costs including management of opportunistic complications.

Making HIV testing simple, accessible, and routine, and increasing the number of people who know their diagnosis is key to preventing HIV transmission. HIV self-testing, through internet recruitment and ordering with the distribution of test kits by delivery, could be a promising new strategy to reach at-risk persons including "first-time tester" at a relatively low cost. A self-testing programme also could serve those who cannot or will not access traditional HIV testing services.

## Reference

<sup>1</sup> DH. Factsheet: A Feasibility Study of Using a Web-based Ordering and Result Upload of HIV Self-testing (HIVST) among Men Who Have Sex with Men (MSM) in Hong Kong. September 2020. Available at: [https://www.aids.gov.hk/pdf/HIVST\\_eng.pdf](https://www.aids.gov.hk/pdf/HIVST_eng.pdf)

<sup>2</sup> DH "HIV Self-Test" Website. Available at: <https://dh-hivst.com.hk/self-test>

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## **FACTSHEET on A study of delivery of HIV self-test (HIVST) through internet-based channel with online targeted promotion among key populations in Hong Kong**

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