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Perspective des patients et des médecins à l'égard du dépistage VIH aux urgences: Une étude prospective transversale

Etudiant

Nicolas Dattner

Tuteur

Dr Matthias Cavassini
Service des maladies infectieuses
Dpt de médecine, CHUV

Co-tuteurs

Dr Katharine E.A. Darling
Service des maladies infectieuses
Dpt de médecine, CHUV

Dr Olivier Hugli
Dpt des urgences, CHUV

Expert

Dr Solange Peters
Dpt d'oncologie, CHUV

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9 Noemy De Rossi^{1*}, Nicolas Dattner^{1*}, Matthias Cavassini², Solange Peters³, Olivier Hugli^{4*},
10 Katharine E.A. Darling^{2*}
11

12
13 ¹Faculty of Biology and Medicine, University of Lausanne; ²Infectious Diseases Service,
14

15 ³Department of Oncology and ⁴Emergency Department, Lausanne University Hospital,
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17 Lausanne, Switzerland
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19 *Equal contribution
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What this paper adds

What is already known on this subject:

- HIV testing is key in diagnosing patients early in HIV infection, in turn enabling access to antiretroviral therapy and limiting morbidity, mortality and health care costs.
- Numerous barriers to HIV testing, both patient- and physician-led have been described.
- Barriers to testing in the Swiss emergency department (ED) setting are relatively unexplored, as is patient acceptance of potential rapid HIV testing programmes.

What this study adds:

- This study showed that the wish to focus on the presenting complaint was a barrier shared between patients and physicians.
- The offer of free rapid HIV testing by health care professionals external to the patient-physician consultation increased the HIV testing rate from 1% (baseline) to 50% of all patients seen.
- Offering rapid HIV testing in Swiss EDs could enable testing of patients who would not otherwise be tested during their ED visit and help optimise early HIV diagnoses.

Abstract**Background**

At our emergency department (ED), 1% of all patients seen are tested for HIV. This study explored patient- and physician-led barriers and acceptability of rapid HIV testing.

Methods

Between October 2014 and May 2015, 100 patient-physician pairs were interviewed in the ED of Lausanne University Hospital, Lausanne, Switzerland. Patients completed a questionnaire on HIV risk factors and were offered free rapid HIV testing (INSTI™). For every patient included, the treating physician was asked if HIV testing had been indicated according to the national testing recommendations, mentioned, or offered during the consultation.

Results: Of 100 patients, 30 had indications for HIV testing through risk factors or a suggestive presenting complaint. Although 17 patients wished to be tested during their ED consultation, none raised the subject with their physician. Fifty patients accepted rapid testing; no test was reactive. Of 50 patients declining testing, 82% considered themselves not at risk or had recently tested negative and 16% wished to focus on their presenting complaint (PC). Twenty physicians identified patients with testing indications and six offered testing. The main reason for not mentioning or offering testing was the wish to focus on the PC.

Conclusion: Patients and physicians at our ED share the barrier of wishing to focus on the PC. Rapid HIV testing offered in parallel to the patient-physician consultation increased the testing rate from 6% (offered by physicians) to 50%. Introducing this service would enable testing of patients not offered tested by their physicians and optimise early HIV diagnoses.

Introduction

In Switzerland, 15,000 to 27,000 individuals are currently living with HIV/AIDS¹. Almost one third of new HIV infections are diagnosed late, with CD4 cell counts below 200 cells/mm³ or an AIDS-defining illness, with associated increased morbidity, mortality, health care costs and risk of onward transmission^{2,3}.

HIV testing is key in diagnosing patients early in their infection. In 2006, the Centers for Control and Prevention of Diseases (CDC) recommended opt-out, non-targeted HIV testing of all individuals aged 13 to 64 years old attending a health care system in areas where local HIV seroprevalence is $\geq 0.1\%$ ⁴. In Switzerland, the Federal Office of Public Health (FOPH) first published HIV testing recommendations in 2007⁵, with updates published in 2010, 2013⁶ and 2015⁷. The FOPH recommendations propose Physician-Initiated Counselling and Testing (PICT), which is diagnostic, targeted and opt-in⁵. Since 2010, the emergency department (ED) has been mentioned specifically as a setting for HIV screening.

Many practical barriers to non-targeted testing have been described, particularly in the ED. Patient-led barriers include the belief that testing is unnecessary, through the perception of being at low risk⁸ or a recent negative test⁸, the wish to focus on the reason for presenting to the ED⁸ and concerns regarding confidentiality^{8,9}. Physician-led barriers include competing priorities¹⁰, forgetting to offer testing¹⁰, barriers related to confidentiality⁹, time^{11,12} and space¹¹, the perception that HIV testing is not part of emergency care provision¹¹ and concerns regarding follow-up care^{11,12}. Against these barriers, the implementation of rapid HIV testing has been reported to have positive effects on testing rates^{13,14}, particularly when additional staff are employed¹⁴.

In our centre, we reported no improvement in testing rates over a range of clinical services following publication of the updated 2010 FOPH recommendations, which had been modified to facilitate testing¹⁵. In the ED, the HIV testing rate was 1% of all patients seen¹⁵. We also reported that only 18% of physicians working in the EDs of the five principal teaching hospitals in French-speaking Switzerland were aware of testing recommendations¹⁶. Further, awareness did not translate into higher HIV testing rates, indicating that physician awareness

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3 alone is not enough to change behaviour¹⁶. On the patient side, we recently reported that
4 among 411 patients attending our ED, most (72%) agreed in principle with routine (non-
5 targeted) testing in the ED and yet only 5.8% were subsequently tested¹⁷.
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9 Physician-led barriers to HIV testing, beyond lack of awareness of testing recommendations,
10 and patient-led barriers have been relatively under-explored in the Swiss ED setting. This
11 study set out to identify barriers within specific patient-physician consultations and to
12 examine patient acceptance of rapid HIV testing.
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16 17 18 19 **Methods**

20 21 **Ethical Statement**

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23 The study was approved by the Ethical Committee on Human Research of the Canton of
24 Vaud, Switzerland (protocol number 95/14). All participants (see below) gave written consent
25 prior to study inclusion and patients signed an additional consent form prior to rapid HIV
26 testing.
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31 32 33 **Study setting and participants**

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35 The study took place in the emergency department (ED) of Lausanne University Hospital
36 (LUH), Lausanne, Switzerland, between 1 October 2014 and 19 May 2015. LUH ED provides
37 close to 40,000 consultations per year¹⁸ and HIV seroprevalence in the local population is
38 around 0.4%¹.
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44 The study participants were 1) patients aged between 18 and 75 years old presenting to LUH
45 ED who had completed their consultation with an ED physician and 2) the treating physician
46 of each included patient. Exclusion criteria for patients were clinical instability, transfer from
47 another hospital or prison, admission >12 hours prior to interview, known positive HIV status,
48 and inability to provide informed consent due to impaired judgement, cognitive disorders,
49 mental retardation, intoxication or other communication difficulties. There were no exclusion
50 criteria for physicians who consented to participate but participation was restricted to a
51 maximum of four interviews within a single shift to avoid behaviour change (Hawthorne
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7 **Study design**

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9 The aim of this prospective study was to explore the perspectives of patients and physicians
10 with respect to mentioning HIV and performing testing, to examine patient acceptance of
11 rapid testing, and to quantify ED physician capacity to identify patients with testing
12 indications according to FOPH recommendations.
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16 A convenience sample of 100 patient-physician pairs was interviewed by face-to-face
17 questionnaire (see below). Eligible patients were identified using the live computer system
18 and were approached after their ED consultation. Patients agreeing to participate completed
19 a questionnaire and were offered a free rapid HIV test using fingerstick blood (24 INSTI™
20 HIV-1/HIV-2 Rapid Antibody Test, BioLytical Laboratories, Richmond, BC, Canada). The ED
21 physician of each included patient was then interviewed separately. Patient inclusion, patient
22 and physician interviews and rapid HIV testing of patients were performed by the study
23 investigators, two medical students in their final year of training (NDR and ND). As this was
24 the first study in our ED to involve rapid testing, and as rapid testing was conducted by
25 medical students, all patient interviews took place between 08:00H and 16:00H to ensure
26 access to a duty infectious diseases physician in the event of a reactive test.
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30 Prior to the study, two interactive training seminars were organised for the ED physicians
31 detailing the 2013 FOPH HIV testing recommendations, the practice of HIV testing and the
32 study protocol. The ED at LUH employs 50 junior physicians who rotate every three or six
33 months and so additional seminars were provided at each junior staff changeover. All ED
34 physicians received an email attaching the seminar presentation, a study information sheet
35 and a pocket-sized information card listing the FOPH testing recommendations. This
36 educational intervention was typical of the teaching seminars organised in our ED as part of
37 continued postgraduate training. Physician participation in the study was voluntary and
38 required written consent.
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Questionnaires

The patient questionnaire had three sections. The first section covered demographic details and the reason for presentation given by the patient (presenting complaint, PC). The coded PC as defined by the Swiss Emergency Triage Scale® (ETS)¹⁹, available from the central ED database, was also recorded to ensure data accuracy. The second questionnaire section covered attitudes to HIV testing and HIV risk factors. Patients were asked if they would have liked to have been offered HIV testing, if their ED physician had mentioned HIV or offered testing and the reasons, where applicable, for not mentioning HIV themselves. They were asked about HIV testing history, history of condomless sex (CS) and type of partner(s) (stable, casual or both), and about HIV risk factors (patients' own and those of sexual partners), based on those listed in the FOPH testing recommendations⁶. The patients were offered rapid HIV testing in the third questionnaire section, and invited to give reasons for accepting or declining from a list of response options. The patient questionnaire took approximately 15 minutes to complete.

The physician questionnaire had two sections and took approximately 3 minutes to complete. The first section covered demographic details and postgraduate experience. In the second section, physicians were asked if HIV had been indicated for their patient according to the FOPH testing recommendations, if they had mentioned HIV and if they had offered HIV testing. They were invited to give reasons in each case from a list of options. Owing to demands on ED physicians' time, the questionnaire was completed either face-to-face with the study investigators or in the physicians' own time, provided this was within 24 hours of the patient consultation to minimise recall bias.

Throughout October 2014, a pilot study was conducted among 15 patient-physician pairs at LUH ED to validate the questionnaires and examine practical feasibility of rapid testing. Questionnaire questions which consistently required clarification during the pilot phase were modified and response options were widened. The formal study was then conducted between 11 November 2014 and 19 May 2015.

Data management

Data from the paper questionnaires were entered independently into two separate databases by each of the two investigators. The databases were then merged and discrepancies in the data were resolved by checking the original questionnaire to insure accuracy of the parameters entered²⁰.

Statistical analysis

Patients were grouped by HIV risk, according to the FOPH testing recommendations. Group A patients had HIV testing indications based on their PC (one or a combination of fever, flu-like illness or lymphadenopathy); group B patients had testing indications through having HIV risk factors and/or CS with sexual partner(s) with risk factors; group C patients reported CS during the preceding six months but had no other HIV risk factors and no suggestive PC; and group D patients had no indications for HIV testing: no HIV risk factors, no suggestive PC and no history of CS.

Data are presented as mean \pm standard deviation (SD), median \pm inter-quartile ratio (IQR) and as percentages. Proportions were compared using the Chi-squared test, or Fisher's exact test when appropriate, and means were compared using Student's t-test. The statistical analysis was conducted using Microsoft Excel 2008 (Microsoft Corporation, Redmond, WA, USA).

Results

Patients

During the study shifts between 11 November 2014 and 19 May 2015, 135 eligible patients were identified: 100 (75%) agreed to participate; 20 (15%) declined and 15 (11%) were unavailable as undergoing examinations. As 100 patient-physician pairs were interviewed, patient and physician numbers and percentages are presented interchangeably unless subgroups are described.

Patient demographic characteristics are shown in Table 1. The most common reasons for

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3 presenting to the ED were trauma (36%) and abdominal / gynaecological complaints (25%).
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5 Six patients presented with one or a combination of fever, flu-like symptoms and
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7 lymphadenopathy and made up risk group A. One group A patient also had HIV risk factors
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9 and so group A and B patients were combined for analysis (Table 1). By definition, there was
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11 no overlap between groups C and D. In total, 68 patients reported CS during the preceding
12
13 six months, the majority with stable partners (Table 1). Previous HIV testing, reported by 66
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15 patients, was less frequent among group D patients than those in other groups (36% versus
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17 74%, $P=0.03$) (Table 1).

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19 Most patients (83%) had not wished to be tested during their consultation by the ED
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21 physician (Figure 1) and gave not being at risk (72 patients, 87%) and HIV not being relevant
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23 to their PC (51 patients, 62%) as the main reasons (multiple responses allowed). Concerning
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25 the 17 patients who would have liked to have been tested, the treating ED physician
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27 mentioned HIV to two (12%); the other 15 (88%) did not raise the subject themselves through
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29 preferring to focus on the presenting complaint (PC) (ten patients, 67%), forgetting (six
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31 patients, 40%), feeling embarrassed (one patients, 6.7%) or not wanting to bother the
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33 physician with several issues at the same time (one patient, 6.7%) (multiple responses
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35 allowed). No patient cited concerns regarding confidentiality.

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37 In total, five patients had discussed HIV with their ED physician and three were offered
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39 testing. In contrast, 50 patients accepted the offer of rapid HIV testing (Figure 1), to confirm
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41 negative HIV status (42 patients, 84%), to benefit testing being available (five patients, 10%),
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43 and through concern of being at risk (three patients, 6%) (single response allowed). Those
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45 declining rapid testing believed themselves not at risk (28 patients, 56%), had recently tested
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47 negative (13 patients, 26%), preferred to focus on the PC (eight patients, 16%) or feared
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49 needles (one patient, 2%) (single response allowed). All rapid tests performed were negative.

50 51 52 53 54 **Physicians**

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56 All ED physicians (33 in total) treating the 100 included patients agreed to participate. The
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58 median number of interviews completed by a single ED physician was two (IQR 2:4; range 2-
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3 9), and median number completed within a single shift was one (IQR 1:2; range 1-4). Male
4 physicians saw 45% of the included patients, and most physicians were Swiss (64%) or
5 European (30%). Junior physicians with a median postgraduate experience of three years
6 (IQR 1:3.5) saw 93% of the patients.
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10 Physicians identified FOPH indications for HIV testing in 20 patients, of whom two had
11 indications not listed in the FOPH recommendations (vaginal candidiasis and 'intuition').
12 Grouping together physicians who believed that testing was not indicated and those who
13 were unsure, physician *sensitivity* in identifying patients with testing indications was 30% and
14 *specificity* was 87%, against a patient sample in which 30% had HIV risk factors (patient
15 group A/B).
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20 Physicians mentioned HIV to nine patients and offered testing to six (Figure 2). The most
21 common reason for not mentioning HIV or offering testing was the wish to focus on or stay
22 relevant to the PC (Table 2).
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26 There was no difference in testing behaviour associated with the number of times a physician
27 was interviewed or with particular time points during the study (data not shown). The patients
28 offered HIV testing were seen by six different physicians.
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30 31 32 33 34 35 36 37 **Study investigators**

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39 Each study investigator performed rapid HIV testing on 50% of the patients they interviewed.
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41 There was no difference in the demography of patients recruited by each investigator and no
42 difference in HIV testing rates with time ($P>0.9$).
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Discussion

This study is novel as it sheds light on patient and physician barriers to testing during the same ED consultation, and barriers which are shared, in our ED. We observed that most patients (83%) did not wish initially to be HIV tested during their ED visit. Yet, 34 of these patients (41%) subsequently accepted the offer of rapid testing. Thus, the final testing rate increased from 6% (offered by physicians) to 50%. Although ED physicians attended information seminars and carried a pocket summary of the FOPH testing recommendations, they identified only 30% of patients who had HIV testing indications. Furthermore, 75% who stated testing was indicated failed to offer testing. Our findings are concerning if physicians are expected to *initiate* testing, as proposed by the FOPH PICT recommendations.

Regarding patient barriers to testing, the belief of not at being risk or a recent negative test were the most commonly cited reasons, followed by the wish to focus on the presenting complaint. ED physicians also primarily wished to focus and/or stay 'relevant' to the PC. To our knowledge, this is the first study demonstrating the wish to focus on the PC as a shared barrier to HIV testing. Whilst medically valid, this perspective may contribute to the low testing rate observed in our ED^{15,16}. If the ED is to participate in HIV screening and testing, our study suggests a unique role that healthcare professionals external to the patient-physician consultation would have in offering HIV testing.

The patients in this study were mainly Swiss or European and the majority reporting CS had stable partners only. Importantly, there were no significant differences in age, sex, nationality (European or non-European) or access to primary health care between the different HIV risk groups. Without demographic markers from this patient sample that can be applied to the general ED population, it is not possible to identify at-risk patients without taking a risk factor and sexual history. If both patients and physicians wish to focus on the PC, potential HIV risk factors are not discussed, giving rise to the low sensitivity among physicians in identifying patients with testing indications.

This low sensitivity also calls into question the merit of informing ED physicians about HIV testing recommendations, although this measure resulted in a modest 5% increase of the

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3 HIV testing rate over the previously observed baseline^{15,16}. It is possible that the complexity
4 of the current recommendations played a role. During training seminars, many ED physicians
5 described the FOPH testing recommendations as overly complicated compared to the non-
6 targeted approach (MD, KD, own observations), but the physician questionnaire did not
7 quantify such attitudes. Another problem may lie with the premise of the PICT approach
8 itself, where physicians must detect HIV risk factors. To do so, taking a sexual history is
9 necessary, a step often omitted by physicians even in settings with less time pressure than
10 the ED^{21,22}. Effective interventions exist to improve sexual history²², but may be costly to
11 implement in every ED. An alternative would be to offer routine testing, regardless of the risk
12 factors⁴.

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23 If physicians do not identify patients who should be tested and if both patients and physicians
24 wish to focus on, and perform investigations relevant to, the PC, then HIV testing is not going
25 to take place. However, we observed that most ED patients were agreeable to be tested
26 when approached, even though they did not think about HIV testing, and did not raise the
27 subject themselves. Furthermore, we have shown in our ED that 27% of patients who have
28 had a blood test during their ED visit believe they have been tested for HIV, even if the
29 physician did not mention the subject or offer testing¹⁷. It is therefore important to actively
30 offer HIV testing rather than waiting for the patient to ask. If a detailed risk history is
31 cumbersome to obtain, particularly from patients with minor complaints, it might be better to
32 assign testing to other staff in the ED. These healthcare professionals, who do not need to
33 be physicians or nurses, could act in parallel to the medical consultation, approaching
34 patients, identifying those with HIV risk factors and offering testing. Indeed, the 2013 and
35 2015 FOPH recommendations state explicitly that the testing directive applies not only to
36 physicians but to medical personnel in collaboration with physicians^{6,7}. However, it may not
37 be cost-efficient to hire personnel dedicated to HIV screening. Another option would be to
38 offer screening through dedicated electronic devices, such as tablet computer, which have
39 high acceptability and feasibility to overcome barriers to screening, interventions, and
40 referrals to treatment in the ED²³. Furthermore, in the context of HIV risk factors screening,
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3 use of tablet is well-accepted, and may provide more accurate data on high risk behaviours
4 than face-to face interview^{24,25}.

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6 This study has limitations. First, only clinically stable patients aged 18 to 75 years old were
7 eligible, so that most patients were recruited from the ED minors section and most were
8 discharged. Our findings therefore cannot be applied to the whole ED population. Second,
9 patients might have been grouped incorrectly by risk factor. Patients in group A had one or a
10 combination of fever, flu-like symptoms or lymphadenopathy, because only the main PC was
11 documented in the questionnaire, whereas the FOPH recommendations propose testing in
12 patients with at least two of these symptoms. However, as only 6 patients belonged to group
13 A, reclassification would have a marginal effect. Some patients in group B might not have
14 engaged in high-risk behaviour since their last negative HIV test, so would have met criteria
15 for placement in groups C or D. Whilst this might have overestimated the number of patients
16 'missed' for testing by the ED physicians, it does not alter the number identified by physicians
17 as having testing indications but not offered testing. Third, interviews were conducted only
18 within working hours and the patient sample studied may not be representative. Against this,
19 patients admitted within the previous 12 hours were eligible so this bias is limited. Moreover,
20 whilst selection bias might have influenced rapid-testing uptake, it would not have altered
21 physician approach to testing per consultation. Finally, although rapid HIV testing uptake
22 may have been inflated by the provision of free testing, only five patients gave this as their
23 main motivation.
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43 In conclusion, training ED physicians to recognise HIV testing indications resulted in an
44 increase in HIV testing from 1% to 6% of patients seen. However, in spite of training
45 sessions and pocket cards, 75% of patients identified as having testing indications were not
46 offered an HIV test. The offer of rapid HIV testing external to the patient-physician
47 consultation was acceptable to patients, performed without complication and increased HIV
48 testing rates from 6% to 50% of consultations. Offering non-targeted rapid HIV testing in the
49 ED at LUH would enable testing of patients who may present HIV risk factors but would not
50 otherwise be tested during their ED visit.
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Figure legends

Figure 1. Flow chart showing patients who would have liked to be tested during their emergency department consultation and those who went on to accept rapid HIV testing, presented according to patient HIV risk group.

¹One patient of the seventeen who would have wished to be tested declined rapid HIV testing through preferring to focus on the presenting complaint.

Figure 2. Flow chart showing the identification of Federal Office of Public Health (FOPH) indications for HIV testing, mention of HIV and offer of HIV testing by emergency department (ED) physicians, presented according to patient HIV risk group. ED physician reasons for not mentioning or offering HIV testing are shown in Table 2. It should be noted that the disparity between the figures for mentioning HIV and offering HIV testing reported by patients and by ED physicians can be explained by the fact that the ED physician interviews took place after those of the patients. In this way, four physicians returned to their patients to mention HIV, resulting in the offer of three additional HIV tests.

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Confidential: For Review Only



Patient questionnaire

Label	Acceptation of rapid HIV testing in the emergency department	Number:	
	Master:	Date: -- / -- / --	Time: -- : --

Patient data

1.1. Hospital episode no:				
1.2. Date of birth:	-- / -- / --			
1.3. Nationality:	Switzerland (0)	<input type="checkbox"/>	South / Central America (3)	<input type="checkbox"/>
	Europe (1)	<input type="checkbox"/>	North America (4)	<input type="checkbox"/>
	Africa (2)	<input type="checkbox"/>	Asia (5)	<input type="checkbox"/>
	Country:			
1.4. Sex:	Male (0)	<input type="checkbox"/>	Female (1)	<input type="checkbox"/>
1.5. Civil status:	Married (0)	<input type="checkbox"/>	Divorced (2)	<input type="checkbox"/>
	Single (1)	<input type="checkbox"/>	Widower (3)	<input type="checkbox"/>
1.6. Presenting complaint:	ETS code:			
1.7. ED section:	Medical majors (0)	<input type="checkbox"/>	Minors (1)	<input type="checkbox"/>
	Surgical majors (2)			
1.8. Destination:	Discharge (0)	<input type="checkbox"/>	Admitted (1)	<input type="checkbox"/>
1.9. Risk factors:	None (0)	<input type="checkbox"/>	Bisexual (3)	<input type="checkbox"/>
	Heterosexual (1)	<input type="checkbox"/>	Injecting drug use (4)	<input type="checkbox"/>
	Men who have sex with men (2)	<input type="checkbox"/>	Other (5)	<input type="checkbox"/>

Inclusion criteria

2.1. Eligible :	Yes (1) <input type="checkbox"/>	2.2.	Accept (1) <input type="checkbox"/>	Decline (0) <input type="checkbox"/>
	No (0) <input type="checkbox"/>	2.3 Reason:		
		Age < 18 years	(0)	<input type="checkbox"/>
		Age > 75 years	(1)	<input type="checkbox"/>
		Not seen by a doctor	(2)	<input type="checkbox"/>
		Admitted > 12 hours	(3)	<input type="checkbox"/>
		Unstable clinical state ¹	(4)	<input type="checkbox"/>
		Transferred from another hospital	(5)	<input type="checkbox"/>
		Cognitive disorders	(6)	<input type="checkbox"/>
		Mental retardation	(7)	<input type="checkbox"/>
		Acute alcohol intoxication	(8)	<input type="checkbox"/>
		Other substance intoxication ²	(9)	<input type="checkbox"/>
		Acute psychosis	(10)	<input type="checkbox"/>
		Suicide attempt	(11)	<input type="checkbox"/>
		Hearing impairment	(12)	<input type="checkbox"/>
		Non-francophone without interpreter	(13)	<input type="checkbox"/>
		HIV positive	(14)	<input type="checkbox"/>
		Prisoner	(15)	<input type="checkbox"/>
		Other	(16)	<input type="checkbox"/>

¹ Resuscitation room

² Opiates or other psychoactive drugs

	Acceptation of rapid HIV testing in the emergency department	Number:
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Thank you for agreeing to participate in this study.
 We are interested in the HIV testing approaches in the emergency department.
 In this questionnaire, we wish to explore your opinion on HIV testing. If you do not wish to answer to one or several questions, you can move on to the following at any time.

3.1. <i>What brought you to the emergency department? (presenting complaint)</i>		
3.2. <i>Do you have a family doctor?</i>	Yes (1)	
	No (0)	
3.3. <i>When did you last see him/her?</i>		
3.4. <i>Do you know your diagnosis today?</i>	Yes (1)	
	No (0)	
3.5. <i>Did the doctor or doctors you have seen talk about HIV or HIV screening?</i>	Yes (1)	
	No (0)	
3.6. <i>If he/they did, did he/they offer an HIV test?</i>	Yes (1)	
	No (0)	
3.7. <i>As part of your ED visit today, would you have liked to be tested for HIV?</i>	Yes (1)	
	No (0)	
3.8. <i>If yes, for what reasons?</i>	Unprotected sex (a)	
	I think I am at risk for HIV (b)	
	I want to be tested (c)	
	I want to make sure I am HIV negative (d)	
	Other (e):	
3.9. <i>If not, for what reasons?</i>	I do not think I am at risk for HIV (a)	
	I don't think it relevant for the reason I came to the ED (b)	
	I don't have sex anymore (c)	
	I don't want to be tested (d)	

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	I'm afraid to be tested (e)	
	I've been recently tested (f)	
	Other (g):	
<p>3.10. <i>If you wanted to talk about HIV and your doctor didn't mention the subject, why didn't you bring the subject up?</i></p>	I prefer to talk about this to another doctor (a)	
	I prefer to focus on the reason I came to the ED (b)	
	I don't want to bother the doctor with several issues at the same time (c)	
	I don't want to talk about my private life (d)	
	I have concerns about confidentiality in the ED (e)	
	HIV doesn't concern me (f):	
	I feels too embarrassed to bring up the subject (g)	
I didn't think to bring up the subject (h)		

Now a few questions about your HIV risk factors. We remind you that you can move on to the next question if you do not wish to answer to a particular question.

4.1. <i>Have you ever been tested for HIV?</i>	Once(1)
	Several times (2)
	Never (0)
	Don't want to answer (3)
4.2. <i>If at least once, when was the last time?</i>	During the last month (1)
	During the last six months (2)
	A year ago (3)
	More than a year ago (4)
	Don't want to answer (5)
4.3 <i>If at least once, where were you tested last time?</i>	Family doctor (1)
	Maternity (2)
	Anonymous screening centre (3)
	Medical outpatient clinic (4)
	Emergency department (5)
	Walk-in emergency centre (6)
	Myself with a kit bought online (7)
	Private clinic (8)
	During an hospital stay (9)
	Army (10)
	Blood donation (11)
	Private laboratory (12)
	Urologist (13)
	Occupational medicine (14)
Immunology (15)	

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	Don't remember (16)	
	Don't want to answer (17)	
4.4 a) Have you had unprotected sex during the last six months?	Once (1)	
	Several times (2)	
	Never (0)	
	Don't want to answer (3)	
• b) If yes, with what type of partner?	Stable (0)	
	Occasional (1)	
	Both (2)	
	Don't want to answer (3)	
• c) If yes, do you know the HIV status of your partner(s)?	Yes (1)	
	No (0)	
	Don't want to answer (2)	
• d) Have you had sex with people at risk for HIV?	Yes	No
• d1) Men who have sex with men		
• d2) People in prison		
• d3) People with sexually transmitted infections		
• d4) People injecting drugs		
• d5) Sex workers		

<ul style="list-style-type: none"> d6) <i>People from sub-Saharan Africa</i> 		
<ul style="list-style-type: none"> How many sexual partners have you had during the last year? 	None (0)	
	One (1)	
	2-5 (2)	
	>5 (3)	
	Number:.....	
	Don't want to answer (5)	
<p>4.5 <i>Have you ever had a blood transfusion?</i></p>	Yes (1)	
	No (0)	
	Don't want to answer (2)	
<p>4.6 <i>Have you ever injected yourself with drugs or any other substance sharing needles with other people?</i></p>	Yes (1)	
	No (0)	
	Don't want to answer (2)	

Now a few questions about HIV testing in the Emergency Department during this visit.

<p>5.1 Do you want to be tested for HIV now?</p>	<p>Yes (1) No (0)</p>	
<p>5.2 If no, what is the main reason you do not want to be tested? (one response)</p>	<p>Recent test (1)</p>	
	<p>I don't think I am at risk (2)</p>	
	<p>I fear a positive result (3)</p>	
	<p>I prefer to focus on the reason I came in the ED (4)</p>	
	<p>Fear of needles (5)</p>	
	<p>Don't want to answer (6)</p>	
<p>5.3 Are there other reasons why you don't want the test? (Multiple responses allowed)</p>	<p>Recent test (1)</p>	
	<p>I don't think I am at risk (2)</p>	
	<p>I fear a positive result (3)</p>	
	<p>I prefer to focus on the reason I came in the ED (4)</p>	
	<p>Other (5)</p>	
	<p>Don't want to answer (6)</p>	
<p>5.4 If yes, what is the main reason you want to be tested? (One response)</p>	<p>I think I am at risk (1)</p>	
	<p>Following your questions, I think I am at risk (2)</p>	
	<p>I want to make sure I am HIV negative (3)</p>	
	<p>For fun (4)</p>	
	<p>This is an opportunity to do this</p>	

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	once (5)	
	I consider the others, my partners, at risk (6)	
	need proof of a negative test for my gynecologist (7)	
	Don't want to answer (8)	
<p>5.5 Are there other reasons why you want to be tested? (Multiple responses allowed)</p>	I think I am at risk (1)	
	Following your questions, I think I am at risk (2)	
	I want to make sure I am HIV negative (3)	
	Other (4)	
	Don't want to answer (5)	

Thank you for your valuable participation



Doctor questionnaire

Label	Acceptation of rapid HIV testing in the emergency department	Number:	
	Master:	Date: __ / __ / __	Time: __ : __

Doctor data

1.1. Nationality:	Switzerland (0)	<input type="checkbox"/>	South / Central America (3)	<input type="checkbox"/>
	Europe (1)	<input type="checkbox"/>	North America (4)	<input type="checkbox"/>
	Africa (2)	<input type="checkbox"/>	Asia (5)	<input type="checkbox"/>
	Country:			
1.2. Sex:	Male (0)	<input type="checkbox"/>	Female (1)	<input type="checkbox"/>
1.3. Title:	Junior doctor (0)	<input type="checkbox"/>	Service chief (2)	<input type="checkbox"/>
	Senior doctor (1)	<input type="checkbox"/>	Other (3)	<input type="checkbox"/>
1.4. Number of years of practice since graduation:				
1.5. Number of years of practice in the ED:				
1.6 Specialist service	Internal medicine	<input type="checkbox"/>		
	Medical outpatients	<input type="checkbox"/>		
	Orthopaedics	<input type="checkbox"/>		
	General surgery surgery	<input type="checkbox"/>		
	Emergency department	<input type="checkbox"/>		

Thank you for agreeing to participate in this study.
 We are interested in the HIV testing approaches in the emergency department. The following questions are about the consultation between you and the patient above (patient label).

<i>2.1 Did you mention HIV with your patient?</i>	Yes (1)	
	No (0)	
<i>2.2 If not, for what reasons? (Multiple responses allowed)</i>	Recent test (1)	
	I don't think that the patient is at risk (2)	
	I prefer to focus on the reason the patient came to the ED (3)	
	I don't think it is relevant for the reason the patient came to the ED (4)	
	I have more urgent care to provide (5)	
	Conducting the test takes too long (6)	
	I will get the result after the patient leaves (7)	
	The test is expensive (8)	
	An HIV test is not recommended by the FOPH (9)	
	I didn't think to bring up the subject (10)	
	I'm picking up this patient from another shift so I haven't re-taken a full history (11)	
<i>2.3 If yes, for what reasons? (Multiple responses allowed)</i>	An HIV test is recommended by the FOPH (1)	
	The patient wanted to be tested (2)	

	Other (3)	
2.4 <i>If you discussed HIV, did you offer a test?</i>		Yes (1)
		No (0)
2.5 <i>If you didn't offer a test, what were the reason(s) for not offering a test? (Multiple responses allowed)</i>	Recent test (1)	
	I prefer to focus on the reason the patient came to the ED (2)	
	I have more urgent care to provide (3)	
	Conducting the test takes too long (4)	
	I will get the result after the patient leaves (5)	
	The test is expensive (6)	
	Other (7)	
2.6 <i>Is an HIV test recommended by the 2013 FOPH recommendations?</i>		Yes (0)
		No (1)
		I don't know (2)
2.7 <i>If yes, which one?</i>	AIDS-defining disease (1)	
	Disease indicating an immune system disorder (2)	
	Symptoms of primary HIV infection (3)	
	Disease that needs a treatment which may cause an immune system disorder (4)	
	Risk behaviour (5)	
	Population at risk (6)	
	Diseases, where the prevalence of undiagnosed HIV infections is probably > 0.5% (7)	

	Other (8)	
<p>2.8 If yes, why didn't you offer an HIV test? (Multiple responses allowed)</p>	I don't feel comfortable (1)	
	I don't have time (2)	
	I proposed that the test should be done elsewhere (3)	
	It is not the role of the ED to screen for HIV (4)	
	I lack training in HIV testing (5)	
	Patient has had recent test(6)	
	I prefer to focus on the reason that brought my patient to the ED (7)	
	I don't think it relevant to the presenting complaint (8)	
	I have more urgent care to do (9)	
	I don't consider the patient to be at risk (10)	
	Conducting the test takes too long (11)	
	I will get the result after the patient leaves (12)	
	The test is expensive (13)	
	I forgot to offer the test (14)	

Thank you for your valuable participation.

Figure 1.

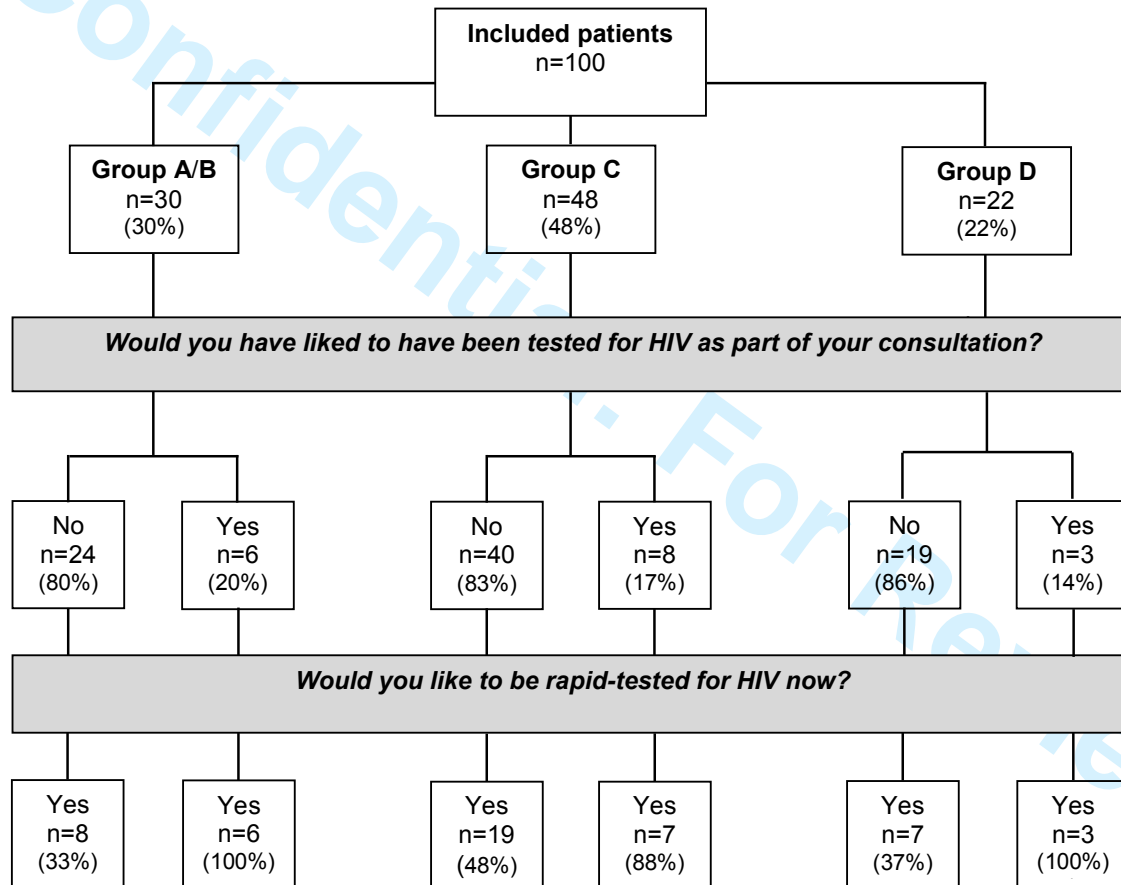
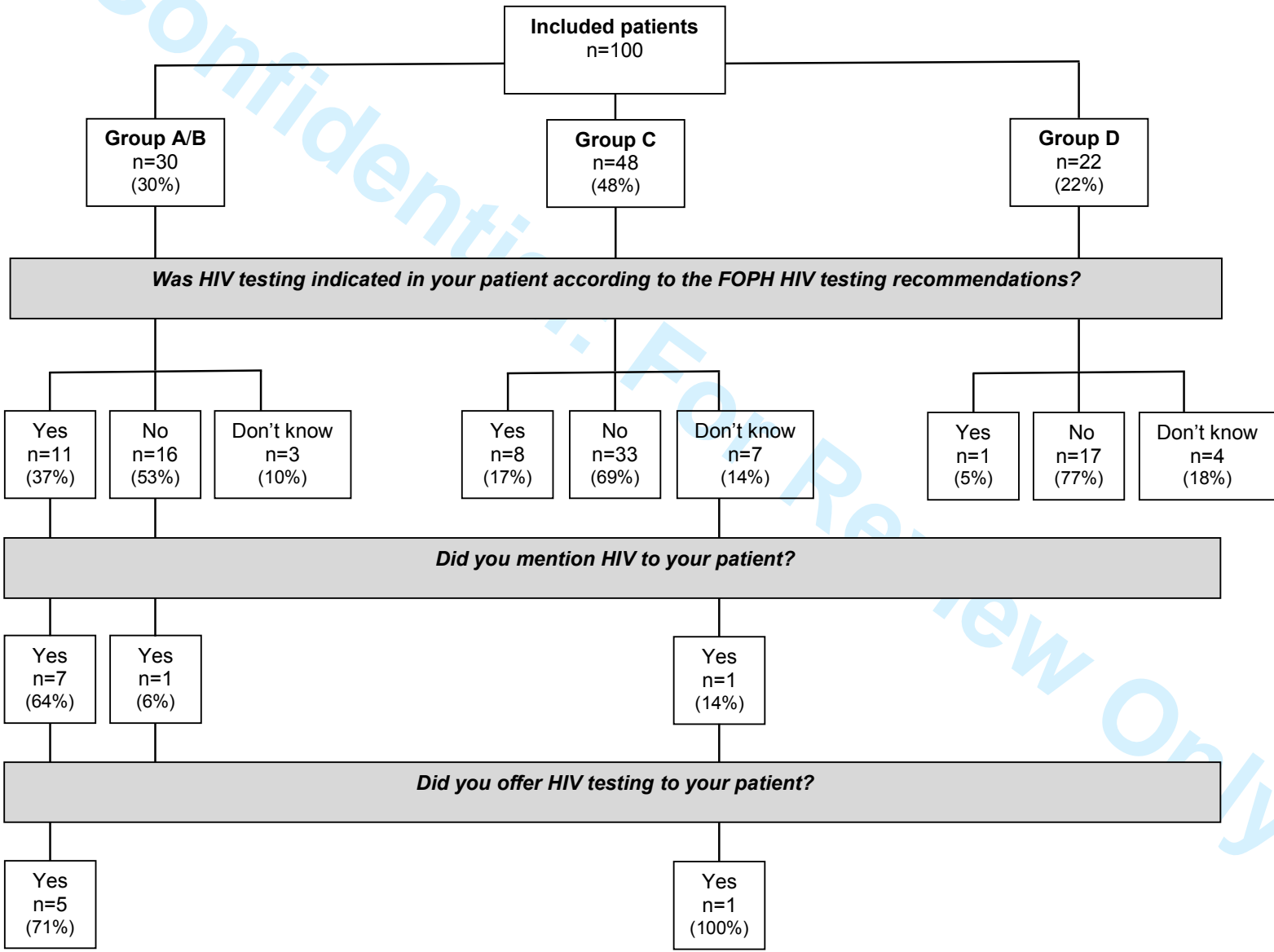


Figure 2.



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Table 1. Patient characteristics, in total and by HIV risk group. Abbreviations: SD, standard deviation; ED, emergency department; MSM, Men who have sex with men; IDUs, injecting drug users; CS, condomless sex.

¹As some patients had HIV risk factors themselves *and* reported CS with sexual partners with risk factors, the total number of patients exceeds the number of patients in group A/B;

²Patients reporting CS solely with a stable partner are presented as a percentage of patients reporting CS;

³Patients tested within the past 12 months are presented as a percentage of those tested;

⁴Group A/B is used as the reference (^[REF]) when comparing patient risk groups unless stated otherwise.

	All patients (n=100)	Group A/B (n=30)	Group C (n=48)	Group D (n=22)	P value ⁴
Age (years), mean (SD)	39.9 (13)	37.7 (12)	40.8 (13)	41 (15)	>0.9
Nationality, n (%)					
Switzerland	56 (56)	11 (37)	27 (56)	18 (82)	0.17
Europe	28 (28)	10 (33)	17 (35)	1 (4.6)	
Other	16 (16)	9 (30)	4 (8.3)	3 (14)	
Male Sex, n (%)	65 (65)	18 (60)	34 (71)	13 (60)	>0.9
ED minors section, n (%)	88 (88)	24 (80)	44 (92)	20 (91)	0.31
Discharged, n (%)	77 (77)	21 (70)	40 (83)	16 (73)	0.88
Risk Factors¹, n (%)					
MSM	2 (2)	2 (6.7)	-	-	NA
Bisexual	3 (3)	3 (10)	-	-	
IDUs (current or former)	2 (2)	2 (6.7)	-	-	
Sub-Saharan African origin	6 (6)	6 (20)	-	-	
CS with high risk partner	18 (18)	18 (60)	-	-	
Followed by family doctor, n (%)	80 (80)	25 (83)	38 (79)	17 (77)	>0.9
CS in past six months², n(%)					

Yes (≥ 1 sexual partner)	68 (68)	20 (67)	48 (100)	NA	-
With stable partner only	62 (91)	16 (80)	46 (96)		0.36
HIV testing history³, n (%)					
≥ 1 previous test	66 (66)	22 (73)	36 (75)	8 (36) ^[REF]	0.03
Tested within past 12 months	26 (39)	11 (50)	13 (36)	2 (25)	-

Table 2. Reasons given by emergency department doctors for not mentioning HIV to patients or for not offering HIV testing when testing identified as indicated according to the Federal Office of Public Health (FOPH) testing recommendations. As multiple responses were allowed, the total number for each column is greater than the number of doctors in each group.

Abbreviations: NA, not applicable (reasons not listed as options).

Reasons for not mentioning HIV or not offering HIV testing when indicated	Doctors who did not mention HIV, n (%) (n=91)	Doctors who did not offer testing, n(%) (n=15)
Not relevant to presenting complaint	65 (71)	7 (47)
Prefer to focus on presenting complaint	40 (44)	3 (20)
Patient not at risk	27 (30)	NA
HIV testing not recommended by the FOPH	24 (26)	NA
Have more urgent care to provide	20 (22)	0 (0)
Forgot	0 (0)	4 (27)
Proposed testing elsewhere	NA	4 (27)
Patient recently tested	NA	3 (20)