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INTRODUCTION

Since 2010 French national guidelines on HIV and hepatitis B (HBV) and C (HCV) testing recommend expanding screening opportunities for these diseases to improve individual and population health.

Nevertheless, gaps between these guidelines and clinical practices remains wide. A third of people are diagnosed with HIV infection at a late stage of the disease and a third of people are unaware of their HBV/HCV status.

Primary care providers such as general practitioners (GPs) can take part in prevention and screening of these diseases but there are many obstacles to achieving this.

We conducted operational research with the aim of assessing the feasibility of HIV/HBV/HCV testing offered routinely by GPs in two French counties.

METHODS

Motivated GPs, recruited from two counties, were trained in HIV and hepatitis prevention and care, including current testing guidelines.

During the one week intervention period, participating GPs were instructed to offer a joint HIV/HBV/HCV test to any patient aged > 18 years old who had never been tested for at least one of these infections. If patients had been tested before, the proposal of a joint test was based on an algorithm. (Figure 1)

During the intervention week we monitored the frequency of and reasons for proposing and prescribing a joint HIV/HBV/HCV test. We then evaluated the intervention's feasibility.

All data were self-reported by GPs via electronic or paper questionnaires.

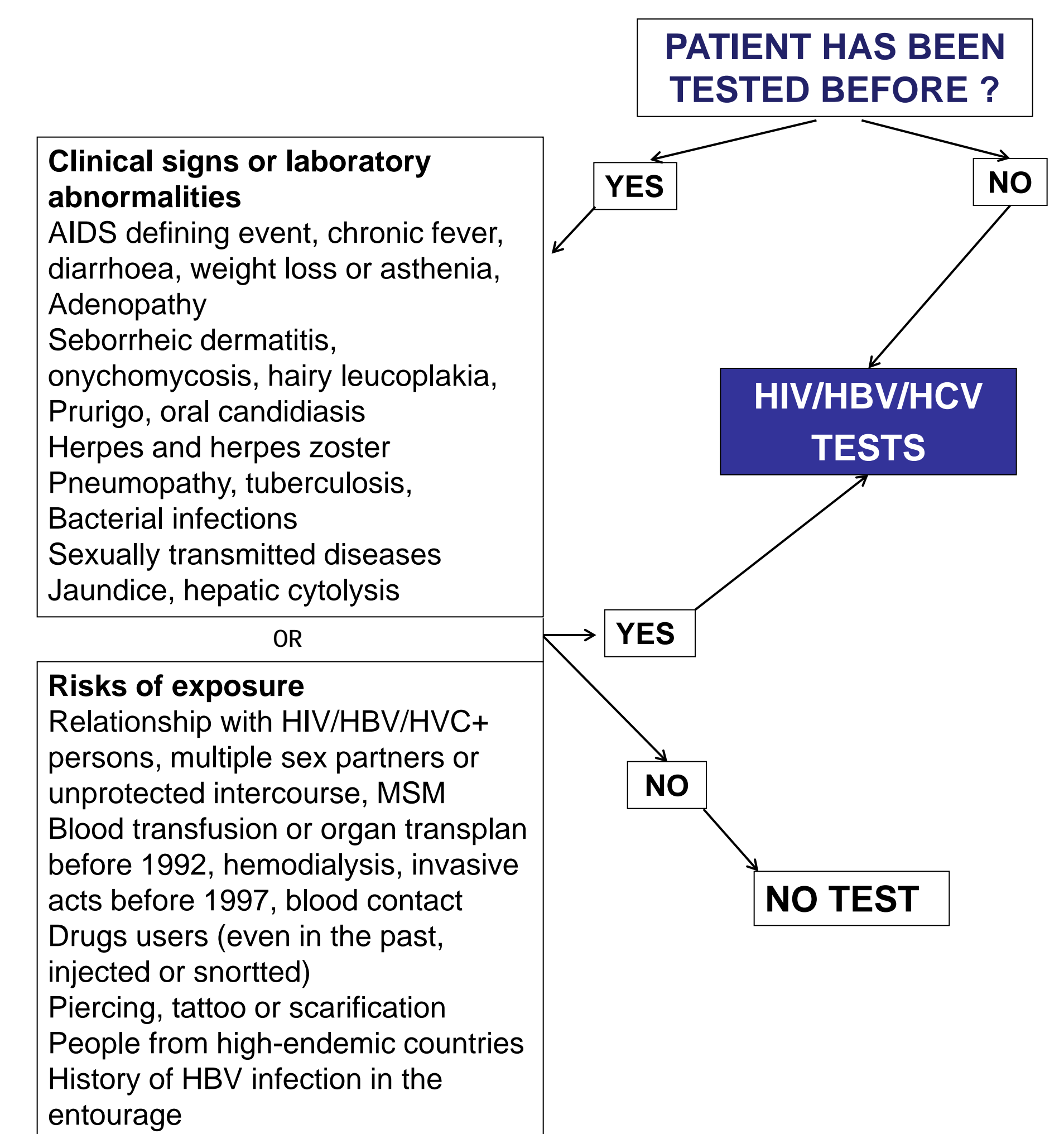


Figure 1 . Algorithm of indication of HIV/HBV/HCV tests

RESULTS

1. GPs characteristics

Of the 303 GPs invited, 66 participated in the study.

The majority of the participating GPs were male (68%), median age 52 years old and their median duration of medical experience was 21 years. Their medical practices were located in both urban and rural areas. GPs reported performing on average 4000 consultations per year, yet reported caring for very few HIV/HBV/HCV+ patients (median 1 to 2 per GP). Fourteen percent of them had informed at least one patient of a positive diagnosis of HIV/HBV/HCV in the previous year.

2. Indication of HIV/HBV/HCV testing

Of the 3566 individuals who presented for care during the study week, 68% (2424) met the criteria for indicated testing ("Indication"). Of which:

- 1124 (46%) had never been tested for at least one of the viruses
- 49 (2%) had clinical signs or laboratory abnormalities
- 198 (8%) were considered to be at risk of exposure

and for 274 (11%) of them the reason for offering a test was not reported,

The remaining 779 cases (33%) where the test was not proposed and the reason for not offering testing was not stated were assumed as having a possible indication (maximum bias hypothesis). (Table 1)

3. Propositions and prescriptions of HIV/HBV/HCV testing

A joint screening was proposed to 1770 patients (73% of patients having an indication): 1641 of individuals meeting the criteria for testing and 129 patients who asked for the test.

The main reasons for not proposing were: already been screened (34%), no signs or symptoms (26%) or issue not discussed (35%) because of a lack of time, a lack of confidentiality or simply oversight.

Among those who were offered the tests, 77% were prescribed a test: HIV, HBV, and HCV 76%, 74% and 80% respectively. 74% were prescribed all three tests. (Figure 2)

The main reasons for non-prescription were the patient refusal or hepatitis B vaccination.

The median number of tests prescribed increased significantly between the preceding week and the study week from 2 to 16 HIV tests and from 1 to 17 HBV and HCV tests ($p < 0.0001$). (Figure 3)

However, only four out of the ten tests prescribed were carried out in laboratories.

4. Changes in GPs testing practices

The GPs reported improvements in their screening practices, especially in the case of at-risk populations (e.g. people from high-endemic countries for HIV or HBV; individuals exposed to HCV via surgical or invasive act, tattoo or piercing). (Table 2)

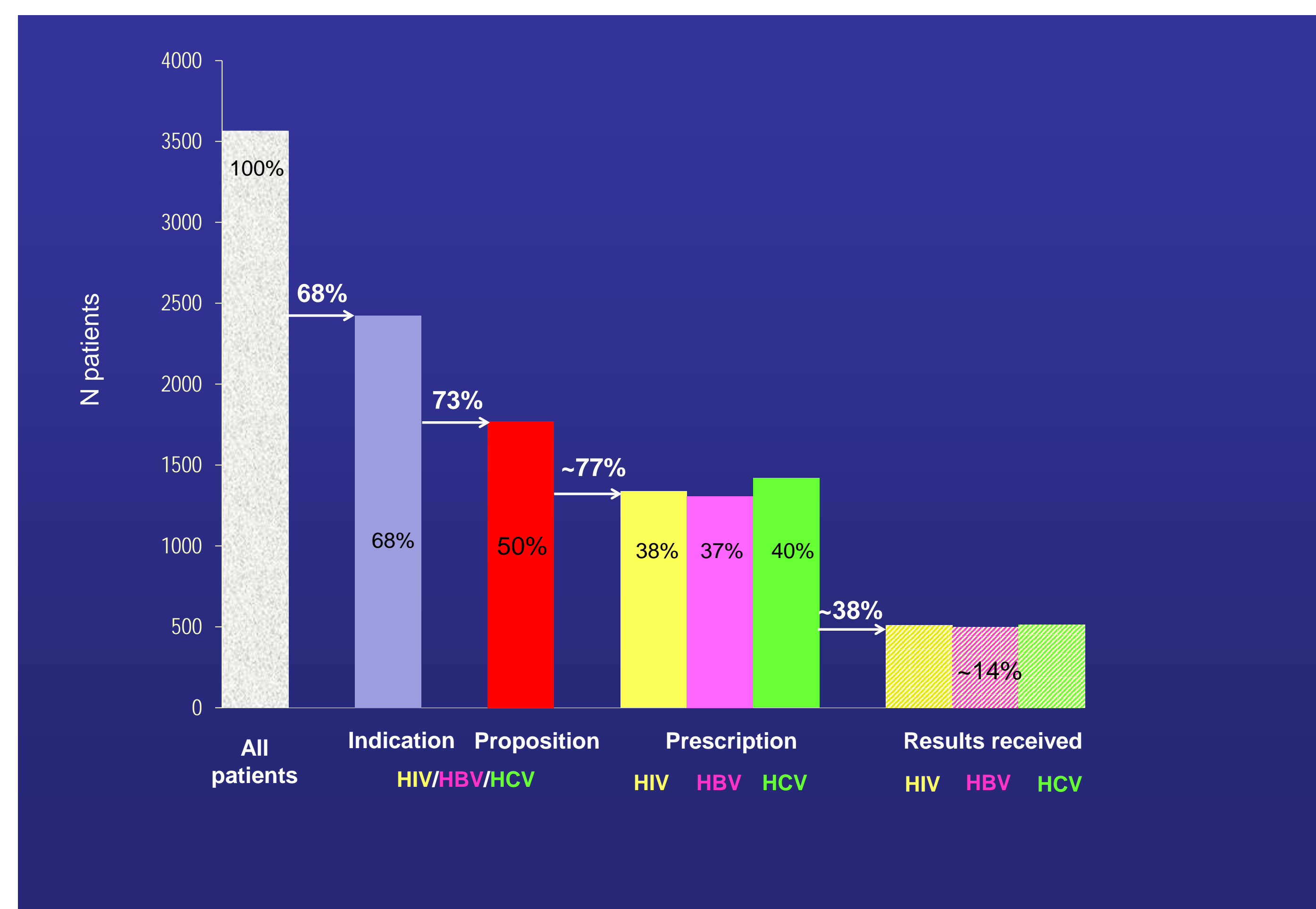


Figure 2 . "Cascade" of HIV/HBV/HCV testing

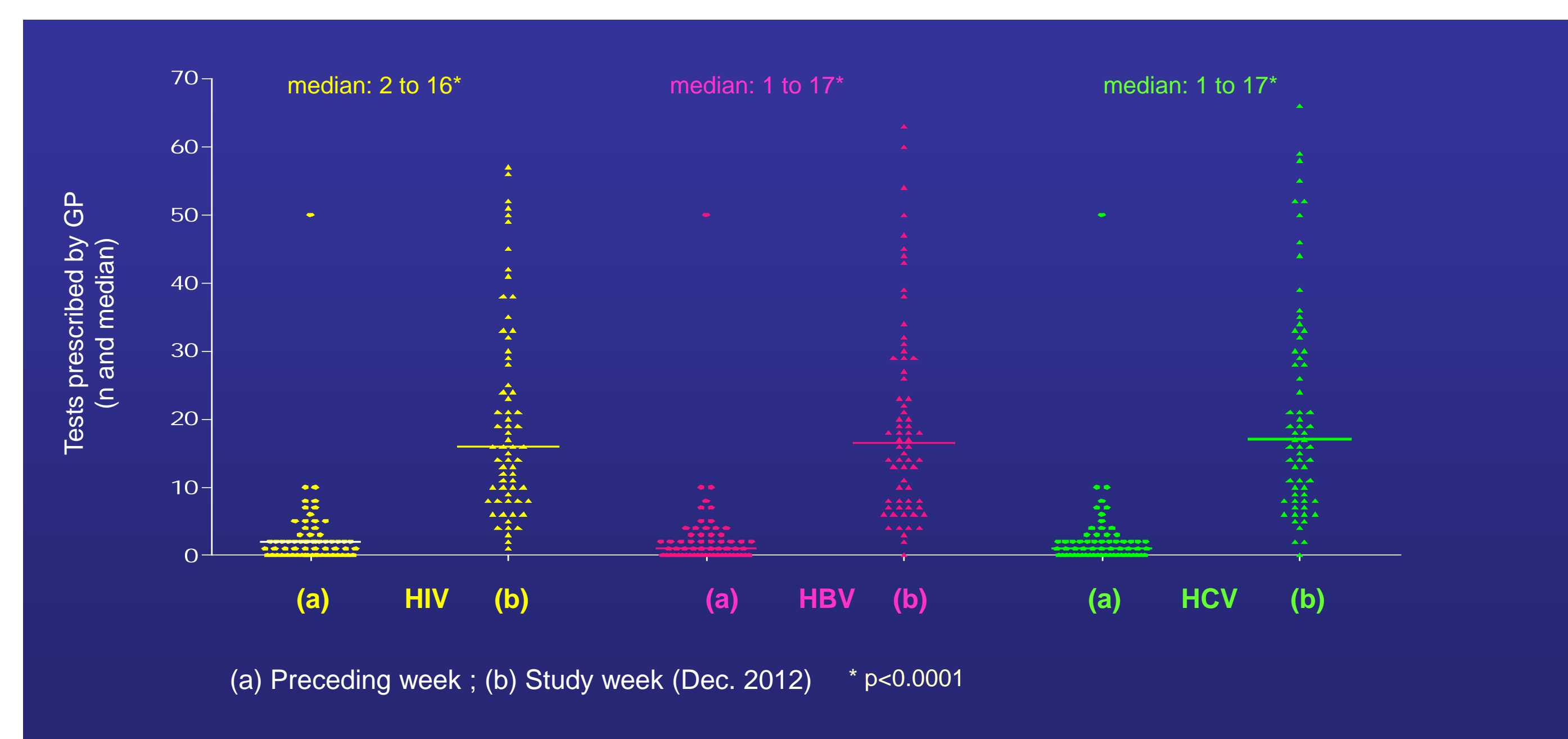


Figure 3 . Changes in HIV/HBV/HCV test proposal

Table 1 . Indication, proposition and prescription of HIV/HBV/HCV tests

N patient (%)	Indication N=2424	Proposition N=1770	HIV test Prescription N=1338	HBV test Prescription N=1307	HCV test Prescription N=1419
Never been tested	1124 (46)	1123 (63)	893 (67)	890 (68)	959 (68)
Clinical signs or lab abnormalities	49 (2)	49 (3)	39 (3)	39 (3)	42 (3)
Risk of exposure	198 (8)	198 (11)	172 (13)	156 (12)	171 (12)
Tests proposed without reason reported	274 (11)	271 (15)	118 (9)	113 (9)	125 (9)
Tests not proposed without reason reported*	779 (33)				
Tests asked by patient		129 (8)	116 (8)	109 (8)	122 (8)

* In this situation it was considered that there was a possible indication (maximum bias hypothesis).

Table 2 . Changes in GPs testing practices

Conditions where the test was frequently proposed (% of GPs)	Before study	After study	p
People having a change in their personal life (HIV test)	65%	82%	0.02
People from high-endemic countries (HBV-HIV tests)	62-64%	88%	0.002
Surgical or invasive act (HCV test)	34%	58%	0.001
Tattoo, piercing (HCV test)	42%	61%	0.01

CONCLUSION

This study conducted in a sample of motivated and trained French General Practitioners showed that GPs are capable of increasing their offering of joint HIV/HBV/HCV testing, at least during a short period. Additionally, GPs reported an improvement in their screening practices after the study period. However, the gap between tests prescribed and tests carried out in laboratories highlights ongoing challenges in the final stage of the "Testing Cascade".

Operational researches involving multiple actors and using new tools and strategies would help to optimize HIV and hepatitis testing to reduce the untested population.

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