Infectious diseases

The fight against HIV/AIDS and sexually transmitted diseases in France

10 years of surveillance 1996-2005

Executive summary

FRENCH INSTITUTE FOR PUBLIC HEALTH SURVEILLANCE

Contents

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10 years of surveillance 1996-2005

Executive summary

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The report contents and the acknowledgements are presented at the end of this document.

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Foreword

More than any other disease, AIDS will have marked the end of the 20th century.

Never has a disease been more threatening for mankind, and despite considerable achievements performed in the field of therapeutics, this threat continues to spread, oddly enough in the poorest countries, especially in Africa.

No disease has ever been subject to such a social and political echoing. Beyond the severity of the disease, its transmission modes and the different populations exposed have highlighted our shortcomings in the public health field and revealed the multiple nature of patients' exclusion. The awareness caused by AIDS in the 1990s has fostered the modernisation of our public health system; it opened the door to patients, to citizens and to the associative world to a legitimous demand for more information and more participation in the development and follow-up of public policies.

The emergence of the disease highlighted the severe deficiencies in terms of health safety, especially as regards blood transfusion, the importance of health surveillance policies in populations and the need for reinforcing the safety of health products.

The French Institute for Public Health Surveillance (InVS), created through the 1998 Law for health safety, is one of the answers to this public health crisis. Before its creation, the Réseau national de santé publique (RNSP) had started to implement the necessary health surveillance tools, in particular, the very first tools of AIDS surveillance.

It appeared, quite rapidly, that surveying the final clinical expression of a chronic infection, namely AIDS, was not enough. Not only early screening and health care as well as better information were necessary, but the progress in epidemiological surveillance had to be performed as close as possible to the population exposed.

HIV surveillance thus complemented AIDS surveillance, not without raising essential questions on the safety and protection of patients' records and anonymity: in close consultation with patients associations, we implemented the most secure surveillance system but also the most complex one to manage. Medical biological laboratories were put in the frontline for the reporting of positive serologies, which resulted in the creation of anonymisation software designed and destined to them. Meanwhile, to measure the recent nature of the infection, a test developed and produced by the National Reference Centre was systematically proposed to patients. The objective was to "stick" as close as possible to the dynamics of the virus spread, in order to reinforce prevention strategies.

Sexual transmission remains the main mode of transmission in France and in the world; understanding and controlling behaviors in this field are particularly complex issues. Studies that we have conducted show the increase of high risk behaviors in undoubtedly well informed environments, including by those who know that they are carriers of the virus.

Epidemiology can not serve any supporting or moral doctrine. It has to serve each individual's health; in particular those who are the most exposed. Despite our relentless efforts to identify and calculate this risk wherever it lies, much work still needs to be developed, in particular, towards vulnerable groups, those whose weaknesses encourage major risk behaviors.

In this context, HIV provides a striking light on our society. Delays in diagnoses, on which the InVS dedicated much work, reveal issues posed by access to screening, to health and health care systems, but also by fears of economic and social stigma that stick so often to the status of those living with HIV.

These "AIDS years" have nonetheless allowed the emergence of a new relationship between the patient and his environment. First, a medical relationship: the right to know, to be treated, to be informed, to choose, to live, even sick, but to be human above all. In addition, reflection around fundamental questions, choices and knowledge was set in motion. Michel Foucault, long before AIDS appeared, described in his history of sexuality the contradictions of a society revolving around repression and how such a power organisation gives birth to points of resistance that are "possible, necessary, unlikely, spontaneous, wild, lonely, concerted, rampant, violent, unreconcialiable, ready to be compromised, interested or sacrificed…". (History of sexuality–the will to know).

… And Michel Foucault pursues… "It is probably the strategic coding of these resistance points that makes a revolution possible…".

In this field, AIDS certainly generated a public health revolution with the emergence of such resistances. But this revolution is not over yet since this disease underlines the increasing extent of inequalities and the responsibilities of power facing them.

With determination, the InVS wants to promote, together with its health and research networks and partners, surveillance and risk assessment tools in favour of a shared knowledge, resembling a kind of resistance to the virus but also to exclusion, which is this capacity of resistance that Georges Canguilhem calls the expression of health.

The results from ten years of surveillance are presented in the report. Long years of patient but staunch efforts; a single brief moment in the history of our society's organisation. But a moment that, we believe, may have mattered much.

Pr Gilles Brücker
General director of the French Institute for Public Health Surveillance

Preface

Since its creation in 1993, the InVS (called at the time the Réseau national de santé publique), has dedicated an important part of its resources to the surveillance of HIV infection.

Prior to the advent of strong antiretroviral therapies in 1996, surveillance mainly focused on AIDS. With major improvements in the diagnosis of HIV infection, surveillance has also considerably progressed. It focused above all on the dynamics of HIV infection, contributing to follow as close as possible and in the most reactive or anticipating way, changes in trends so that prevention is best adapted to the different groups concerned.

Moreover, the period that followed the advent of strong antiretroviral associations experienced important behavioral changes which, according to the groups concerned, were diverging: continuation of risk reduction behaviors in drugs users with the decline of HIV (without any major impact on HCV infection) and decrease in prevention for men having sex with men followed by a series of syphilis, lymphogranulomatosis and sexually transmitted hepatitis C outbreaks, and recently by the increase of new diagnoses of HIV infections.

Meanwhile, the weight of HIV in sub-Saharan Africa seemed increasingly obvious each year in France in individuals from this continent, following migratory flows, in women in particular.

This executive summary is derived from a surveillance report on HIV infection. This report covers the last ten years that have been so rich in development, based upon surveillance work that is at the heart of the InVS expertise.

An important section is also dedicated to the various complementary studies performed by the InVS, most often with the support of ANRS (Agence nationale de recherches sur le sida et les hépatites): Press gay survey, Coquelicot survey, Retard survey…

The thorough analysis of the experience from the last 10 years has resulted in identifying the main trends and evolution that are published in this executive summary, and also future guidance.

Finally, it illustrates how data collected on a daily basis, not only contribute to prevention, but also to adjusting national policies and their assessment.

Dr Jean-Claude Desenclos
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Chronological landmarks

1978	First AIDS case in France
1982	Implementation of an AIDS surveillance system based on the WHO/CDC case definition of AIDS
August 1985	Mandatory screening of blood donations for HIV
June 1986	AIDS becomes a mandatory notifiable disease
1987	Use of AZT monotherapy
July 1987	Creation of free and anonymous voluntary centers for screening (VCT)
1987	Liberalisation of the sale of syringes in pharmacies
1991	Implementation of syringe exchange programmes
1993	Revision of AIDS definition in adults and teenagers
1994	Market authorization of Subutex® as substitution treatment to opiate dependency in drugs users (DUs)
1995	Revision of the classification and definition of AIDS in children
1995	Diffusion of methadone and Steribox® as substitution treatment to opiate dependency in DUs
1995	Generalisation of bitherapies
2nd semester 1996	Generalisation of tritherapies including protease inhibitors
1998	Redefinition of VCT missions enlarging their capacities to hepatitis C and B screening
April 1998	Recommendations related to post-exposure prophylaxis for HIV are extended to all types of exposures (occupational, sexual or through syringe sharing)
May 1999	Decree N°99-363 setting up the list of mandatory notifiable diseases, with the addition of HIV infection regardless of the stage of the disease
July 2000	Abrogation of mandatory notification of sexually transmitted diseases (STIs) which was set up in 1942, and concerned four of them (gonococcal infections, syphilis, Nicolas Favre disease and venereum lymphogranuloma)
May 2001	Decree N°2001-437 setting up the transmission modes of individual data on mandatory notifiable diseases to health authorities
July 2001	Implementation of viral genome screening in blood donations (HIV-1 and HCV)
November 2002	National Commission for Data Protection's authorisation for the implementation of anonymous notification of mandatory notifiable diseases, including HIV and AIDS
1st quarter 2003	Implementation of the new system for anonymous notification of mandatory notifiable diseases, including HIV infection

Executive summary and perspectives

Between 1996 and 2005, the number of persons living with HIV was estimated to have increased from 106,000 to 130,000 in France. Meanwhile, since 2003, the number of persons who found out they are seropositive is stable at around 6,000 to 7,000 cases per year. Lastly, around 27,000 persons lived with AIDS at the end of 2005. However, these figures hide various trends depending on the populations affected. In addition to the dramatic drop of AIDS cases and deaths resulting from the introduction of highly active antiretroviral therapies, these 10 years of surveillance are actually marked by four major trends:

- the increase of high-risk sexual practices among men having sex with men (MSMs) resulting in an increasing number of HIV infections and sexually transmitted infections (STIs) in this population;
- the decrease in the number of drugs users (DUs) newly diagnosed with HIV thanks to their acceptance of risk reduction policies;
- the increase of the number of HIV infected subjects from sub-Saharan Africa;
- and a slow feminisation of HIV infection.

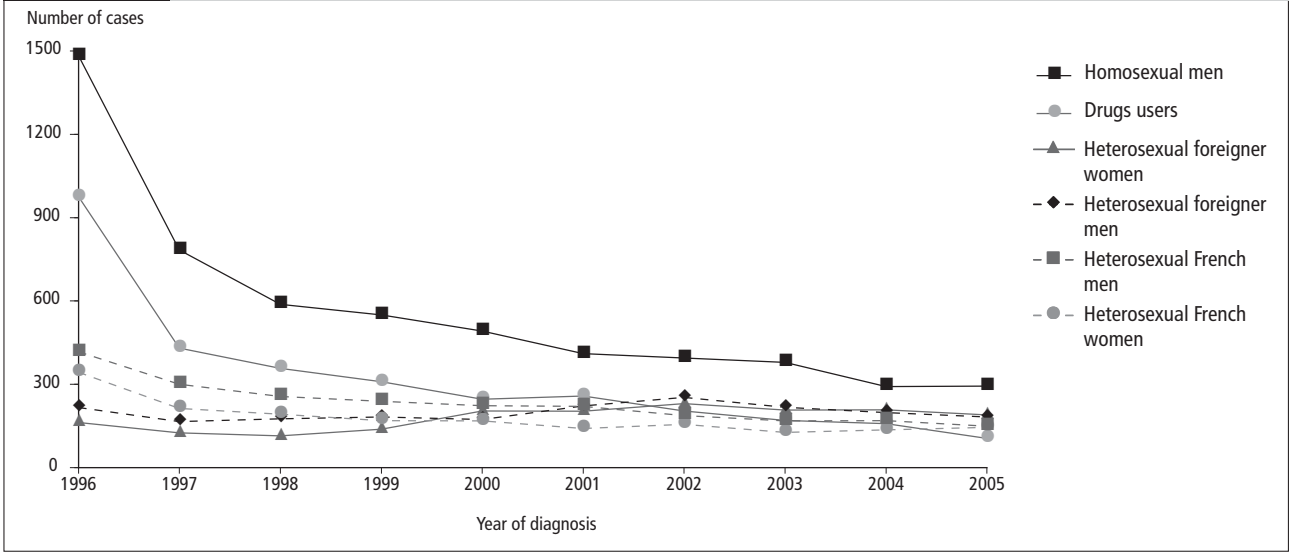
The decrease of AIDS cases was the highest during the two years which followed the introduction of highly active antiretroviral therapies (HAART) (decrease of -43% between 1996 and 1997 and -15% between 1997 and 1998). Then, the drop was lower from one year to the other (-4% to -8%).

AIDS related deaths follow identical trends with a marked decrease during the first two years, then lower again between 2002 and 2005. Survival of AIDS patients increased considerably over this period. Prior to 1994, AIDS prognosis was much severe with an average survival time of 17 months. Between 1994 and 1996, the median survival time improved to 32 months; then, the improvement of survival time was such that no median could be estimated: within 5 years, 75% of patients were still alive and the risk of dying from AIDS continued to decrease [1,2].

For more information, consult the chapters from the report:

- "AIDS surveillance: mandatory notification" by Françoise Cazein (f.cazein@invs.sante.fr) and Roselyne Pinget;
- "Number of persons affected by HIV (HIV prevalence)" by Josiane Pillonel (j.pillonel@invs.sante.fr) and Françoise Cazein.

Figure 1 Number of AIDS cases by contamination mode and year of diagnosis (France, data up to 31-03-2006 adjusted for reporting delays)



Increase of high-risk sexual practices in MSMs

Since the beginning of the epidemic, the French homosexual population has largely been affected by HIV/AIDS. Behavioral surveys show that more than one MSM out of ten "self report" their HIV-positive status (13% to 17%, Presse Gay survey and Baromètre Gay survey). In 1996, persons infected through homosexual intercourse represented more than one third (37%) of persons in whom AIDS was diagnosed, whereas "active" MSMs only represented 1.5% of the male population (around 300,000 men, estimate from ACSF/Inserm survey, 1992). The number of AIDS cases decreased threefold between 1996 and 2000 in MSMs, which represents a more marked decline than in other populations (figure 1). However, the year 2000 was a turning point. While the homosexual population had widely adopted lower sexual risk behaviors in the 1990s, the emergence of STIs with syphilis followed by rectal lymphogranuloma venereum (LGV) in 2003 marked the return of risk behaviors.

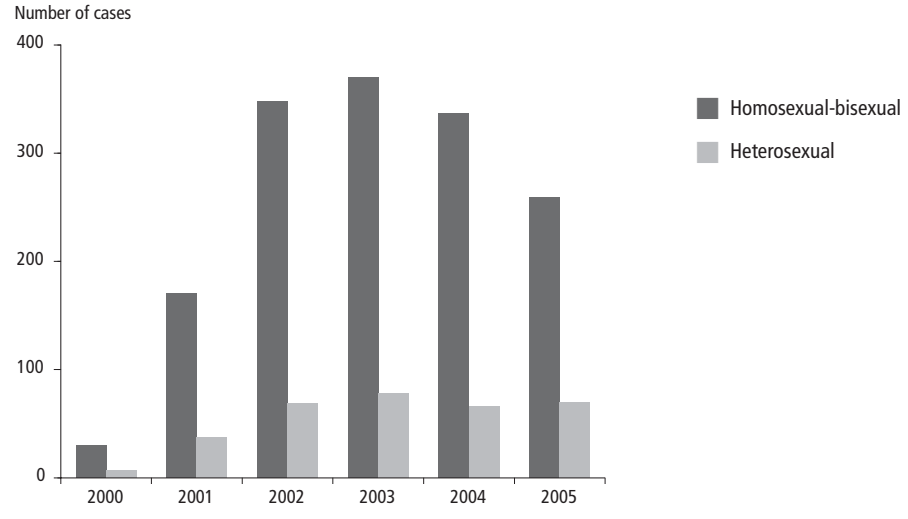
The Presse Gay survey (enquête Presse Gay, EPG), repeated regularly since 1985 among readers from the gay press, showed for the first time an increase of sexual risk behaviors in 2000: the proportion of MSMs reporting at least one unprotected anal intercourse during the last twelve months increased from 19% to 33% between 1997 and

2004. The Baromètre Gay surveys (BG) (2000, 2002 and 2005) based on interviews with MSMs in gay venues, show the same trends between 2000 and 2002. Moreover, these two kinds of surveys show that the highest increase in risk practices is observed in seropositive MSMs, which is alarming in terms of HIV transmission in the homosexual community. Regardless of their sero-status, MSMs are most times multipartners (an average of 21 partners per year, EPG 2004). Most report (70%) one stable partner during the last 12 months, this relationship being rarely exclusive since, twice out of three times, it is open to occasional relationships.

Such risk taking results in new HIV diagnoses. Nearly 1,500 MSMs discover their HIV positive status each year and represent 23% of the total number of new seropositive cases over the 2003-2005 period. Moreover, infection through homosexual intercourse represents the only mode of transmission for which the number of HIV diagnoses has increased over the last three years. Virological surveillance, paired with HIV notification, resulted in another alarming concern: around half of them (45%) were infected in the six months preceding the discovery of their seropositive status. This very high rate reflects new contaminations, despite its link with screening practices within the homosexual community. MSMs actually test themselves quite frequently. Surveys show that most of them were screened for HIV at least once in their life. However, there still remains a proportion of MSMs, even if it is a low one, who have never been screened for HIV and who could be diagnosed too late. These men would consider their seropositivity as a primary "non pathological" condition and the screening approach would only be undertaken once the disease symptoms appear, according to the Retard survey [3].

The increase in risk taking observed since 2000 in the homosexual community also results in an increase of STIs. Since the first cases of syphilis were reported in a Parisian genito-urinary centre at the end of 2000, more than 80% of syphilis cases diagnosed in the surveillance network occur in MSMs, aged 37 years on average, and HIV positive for half of them (figure 2). The syphilis outbreak was first observed in Paris then gradually spread to other regions where it seems to be sustained. Moreover, following the European alert initiated by the Netherlands at the end of 2003, an investigation was conducted in the Paris area at the beginning of 2004: around 20 LGV cases were recorded in MSMs whose diagnosis had been a very late one for most of them. This investigation led to the implementation of a surveillance system based on voluntary facilities located mainly in Paris, and several hundreds of cases were identified by the surveillance network in 2004 and 2005 (244 cases). In France, LGV concerns exclusively MSMs, aged 39 years on average and very often HIV positive (80% of cases). The number of gonoccocal infections has globally increased in men since 1996 with a marked increase since 2003. It is not possible to identify the proportion of MSMs since the surveillance system, based on voluntary laboratories, does not collect information of the sexual orientation of the subjects. However, it can be noted that the number of gonococcal infections diagnosed from anal samples increased from 8% to 11% between 2000 and 2005, suggesting contamination through homosexual intercourse. Behavioral surveys corroborate surveillance data. Thus, the emergence of syphilis and LGV is equally observed in behavioral surveys: the 2004 respondents report having "contracted syphilis" more frequently than the 1997 respondents. In addition, they are most often HIV positive and aged between 35-40 years. In the 2005 Baromètre Gay survey, 1% of respondents reported "having contracted LGV in the last 12 months". On the other hand, gonococcal infections reported by respondents are stable and even decrease in behavioral surveys.

Figure 2 Number of syphilis cases by transmission group between 2000 and 2005, Syphilis Surveillance Network, France



In this context of increasing risk behaviors, other pathologies such as viral hepatitis C have emerged in HIV positive MSMs. Actually, acute hepatitis C cases in HIV positive MSMs have been reported by Parisian health services. A retrospective investigation described 29 cases of hepatitis C which occurred between 2001 and 2004 in these services: the usual risk factors for hepatits C (drug use or hospital acquired infections, for example) have not been evidenced in these men. Anal penetrations with casual partners were rarely protected in these subjects and were sometimes traumatic or bloody. Moreover, these hepatitis infections frequently occurred concomitantly with an STI (in 41% of cases). The hypothesis of hepatitis C transmission through the bleeding (visible or not) of the anal mucosa weakened by multiple traumatic anal penetrations was raised. Transmission could have also been encouraged by preexisting mucous lesions linked to the presence of a concomitant STI.

Information campaigns, with namely a vast incentive campaign for syphilis screening in Paris area in 2002 and actions on the field have multiplied since 2000. MSMs, seropositive or not, represent a population which is rather socially favoured and for whom prevention messages should be easily accessible. Actually, more than 60% of MSMs respondents to surveys have followed graduate studies. Thirty per cent of cases belong to high socio-professional categories (senior executives, independent positions) at the time of AIDS or HIV diagnosis.

Another factor is the ageing of the homosexual population participating in surveys over the years: in the EPG survey, the respondents' mean age increased from 32 years to 37 years with a higher proportion of those over 45 years. MSMs who discovered their seropositive status between 2003 and 2005 were about the same age (37 years). It is therefore difficult to assess whether the HIV epidemic affects young MSMs, who rarely respond to surveys, including internet based surveys. Notification data seem to indicate that those under 25 years of age are less affected (less than 9% among new HIV diagnoses). This figure can result from a lesser HIV contamination, although the screening issue cannot be excluded, and also from a lesser capacity to reveal one's sexual orientation.

For more information, consult the chapters from the report:
- "Men who have sex with men" by Annie Velter (a.velter@invs.sante.fr), Caroline Semaille-Safar and Alice Bouyssou-Michel;
- "HIV surveillance: mandatory notification and virological surveillance" by Françoise Cazein (f.cazein@invs.sante.fr) and Roselyne Pinget;
- "Epidemiology of sexually transmitted diseases" by Anne Gallay (a.gallay@invs.sante.fr), Magid Herida, Alice Bouyssou-Michel, Véronique Goulet.

Decrease in the number of newly HIV infected DUs

The number of DUs ranged from 170,000 to 190,000 in 1999. DUs represent a population much exposed to viral infections, in particular, HIV and HCV through the sharing of injection material, and sniff or crack pipes. Like the homosexual population, DUs were highly affected by HIV from the early 1980s with prevalences reaching 40%. Face to the severity of the epidemic and with the impulse of associations, harm reduction policies were progressively implemented in France in the middle of the 1980s with the liberalisation of syringes sales (in 1987), the first programmes of syringes exchange (PSE, in 1991) and the provision of substitution treatments (in 1994-95). The period 1996-2005 yields an assessment of the impact of this policy on infectious risks in DUs. In 1996, DUs still represented one fourth of subjects diagnosed at the AIDS stage, whereas they only represented 9% in 2005. In addition to the decrease of AIDS cases in DUs, the last 10 years have been marked by the decrease of HIV prevalence and the low number of new HIV diagnoses in this population since 2003. In 1998, HIV prevalence in DUs[1] was estimated at 19% (PSE survey) whereas it was estimated at 11% in 2004 (Coquelicot survey). HIV prevalence decreased mainly in the youngest persons, revealing behavioral changes in new DUs who are less HIV infected: seroprevalence in those under 30 of age in 2004 is almost insignificant (0.3%) considering it reached 8% in 1998 in those under 25. Consequently, the population of HIV positive DUs is growing older. In 2004, they are on average 35 years old (Coquelicot survey) and are mostly males, regardless of the period and the survey. The ageing of HIV positive DUs is also observed through the analysis of AIDS cases: the mean age of DUs, at the time of AIDS diagnosis, has progressively increased from 35 to 41 years. This phenomenon is observed in all transmission modes, however, DUs represent the population who has "aged" the most since young DUs are less infected. Thus, the number of seropositive status discoveries in DUs is very low between 2003 and 2005 (265 cumulated cases). They are mostly DUs infected several years ago and who have escaped screening.

Inciting DUs to be screened for HIV was actually very important and seems to have worked well. Over the period 1996-2005 and compared to other transmission groups, DUs present the lowest risk of being tested late at the time of AIDS diagnosis. In the 2004 Coquelicot survey, nearly all DUs knew their HIV serostatus.

All this data suggests that the harm reduction policy had an impact on the decrease of HIV transmission among DUs. Some results are however of concern. DUs represent a population characterised by extreme social precariousness, which can be observed in employment and housing. This precariousness has apparently become more pronounced between the 1998 and 2004 surveys. The majority of DUs have no stable accommodation (38% in 1998 and 55% in 2004) and 75% of them are unemployed. This instability does not encourage the observance of treatments, and can explain not only the severe prognosis of the disease in DUs following the AIDS diagnosis (the risk of death was twice higher than among heterosexuals, but also the importance of tuberculosis in these subjects. Another result is equally alarming.

If the risk of HIV contamination has considerably decreased during the last ten years, it remains very high for hepatitis C: nearly 60% of DUs are infected by HCV (2004 Coquelicot survey). Prevalence increases with age, although it is already high in young DUs (28% in people under 30 years). HCV prevalence is still even higher in HIV positive UDs. Most seropositive DUs are HCV co-infected, this can be explained by a higher transmission risk for HCV than for HIV.

For more information, consult the chapters from the report:
- "Evolution of sociologic profiles and risk behaviors among DUs" by Marie Jauffret-Roustide (m.jauffret@invs.sante.fr);
- "HIV surveillance: mandatory notification and virological surveillance" by Françoise Cazein (f.cazein@invs.sante.fr) and Roselyne Pinget.

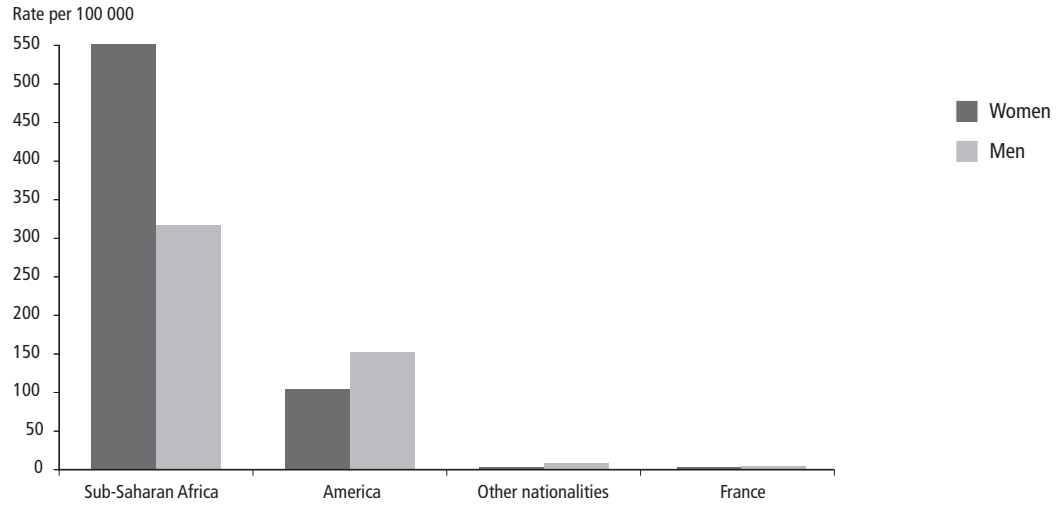
Increase in the number of HIV infected people originating from sub-Saharan Africa

The situation of foreigners with HIV/AIDS in France is not new. Actually, since the start of the epidemic, the proportion of foreigners is not negligible. However, a large progression was observed at the end of the 1990s and was marked by an increasing proportion of nationals from sub-Saharan Africa[2], whether through surveillance systems or in hospitals. Between 1996 and 2005, the proportion of AIDS cases in African people increased from 7% to 24%. Africans represent 32% of

[1] Those concerned are DUs who visit prevention or health care facilities or general practitioners.
[2] For more facility, in the rest of the text, the terms "African persons" or "Africans" will be used for people whose current nationality belongs to one of a sub-Saharan Africa country.

the total number of new HIV diagnoses between 2003 and 2005, mostly in women (65%). In this population, heterosexual relations are the predominant mode of transmission.

Figure 3 Number of new HIV diagnoses in 2005 (for 100,000) adjusted to the population living in France (1999 census), by nationality (data by 31-03-2006)



All the surveys conducted from 2000 confirm the importance of Africans in the epidemiological situation of HIV in France: the survey performed on one given day regarding co-infection with HIV and hepatitis viruses (17% of Africans), the survey on the profile of persons presenting a screening delay (52% in the Retard survey), and the survey performed in free and anonymous voluntary counselling and testing sites (VCTs), where HIV prevalence was the highest among Africans. This high proportion of Africans is also observed in the ANRS-Vespa survey on people living with HIV (12%) [4]. The trends observed in Africans living in France partly reflect the situation of HIV in Western Africa, a region with strong historical ties with France, resulting in increasing migratory flows. At the end of 2003, HIV prevalence in Western African countries varied from 1% in Senegal to 7% in Cameroon and in the Ivory Coast (Source UNAIDS). To a certain extent, prevalence levels from countries of origin are found through notification data for HIV and AIDS: the number of new HIV or AIDS diagnoses in Senegalese people living in France is low, which is not the case for people from the Ivory Coast who present much higher levels. This should not lead to the conclusion that Africans have all been contaminated in their country of origin. Two factors based on the results from virological surveillance suggest that infections also occur in France: nearly 10% of Africans were infected in France in the six months preceding the discovery of their seropositive status, and nearly one African out of four is infected by a subtype B virus, which is historically predominant in Western Europe and almost nonexistent on the African continent.

Unlike MSMs and like DUs, HIV infected Africans combine socioeconomic indicators of precariousness that are found regardless of the data sources used (survey on the medico-social itinerary of HIV positive sub-Saharan Africans in 2002, Retard survey in 2003 and mandatory notification of HIV): 75% of them are unemployed and the majority of them do not live in their own accommodation (61%, Retard survey). This instability could have consequences on treatments observance and on the risk of therapeutic failure [5].

Despite the high rate of affected Africans (figure 3), there are nonetheless some encouraging results. The number of African women who have discovered their seropositive status decreased from 2003 and 2005. In addition, some indicators show an improvement as regards screening in this population: more seropositive cases were diagnosed at an asymptomatic stage in 2005 than in 2003, and a higher number of Africans have used the free and anonymous VCTs in 2004 than in 2000.

For more information, consult the chapters from the report:
- "Situation of foreigners in the HIV epidemic" by Florence Lot (f.lot@invs.sante.fr);
- "HIV surveillance: mandatory notification and virological surveillance" by Françoise Cazein (f.cazein@invs.sante.fr) and Roselyne Pinget;
- "Late HIV health care" by Caroline Semaille-Safar (c.semaille@invs.sante.fr).

The slow feminisation of HIV infection

Feminisation of HIV infection developped between 1996 and 2005. Women represented 21% of AIDS cases in 1996 compared to 33% in 2005. Since 2003, 40% of people who discover their seropositive status are women. This feminisation is also observed in the surveillance of screening activities: the proportion of women among positive serologies increases over time, whether the environment is anonymous or not. Women are always younger than men. Admittedly, among all HIV positive women, African women hold a preponderant position (41% of AIDS cases and 50% of new HIV diagnoses), which can result in overlooking the situation of French heterosexual women. Nearly 400 French women discover their seropositive status each year. They are mostly infected through heterosexual relations and are tested at an early stage: one third of them have been infected in the six months prior to diagnosis, and often with their stable partner. Pregnancy

represents quite an important screening opportunity for these women (14% of testing reasons).

Surveillance systems reveal that the prevalence of STIs is very low in women, with the exception of Chlamydia infections, which have increased from 43% to 58% between 1997 and 2005 in women under 25 years of age. However, these systems may not have comprehensive control of STIs in women since most of them are treated by private gynecologists.

Early screening is an absolute necessity for optimal health care

HIV testing is proposed on a very large scale in France: anyone can be tested in private and hospital laboratories, in free screening facilities like centres for family planning and education (CPEF), in centres for mother and child healthcare (PMI), STI clinics (DAV) or in free and anonymous VCTs (their number varies between 250 to 300 from year to year). The extent of the screening system can partly explain the amount of HIV tests performed every year in France: from 3.6 million in 1997 to 5.3 million in 2005. Screening activities (at the exception of blood donations) reached a peak in 1994 (86 tests/1,000 inhabitants), then declined, and increased again in 1997 in laboratories as well as in VCTs, getting closer in 2005 to the 1994 level.

If the volume of HIV serologies is higher in France (85 per 1,000 inhabitants in 2005) than the one observed in our European neighbours (57 in Belgium), does it mean that the system is still efficient? A certain number of elements suggest that it is.

Based on surveys conducted in VCTs (1999, 2000 and 2004), these consultations attract people presenting higher risks: the proportion of positive serologies (4.7/1,000 tests) is always higher in these facilities than in private or hospital laboratories (2.4/1,000 tests) over the whole 1996-2005 period. Around 1,200 seropositive status are identified by VCTs each year, and represent 11% of all positive serologies. VCTs have also succeeded in attracting younger people for whom consulting means preventing: the age distribution of tested consultants tends to be younger with a larger proportion of youths under 20 years of age. The youths' major reason for consulting is to know their serological status before deciding whether to stop using condoms with their stable partners. Moreover, an increasing number of Africans have consulted in VCTs, from 5% to 10% between both surveys (2000 and 2004).

- On the other hand, even though Africans were more likely to consult in VCTs in 2004, they are still frequently tested late in hospitals on the occurrence of clinical signs. When their AIDS status is discovered, African men and women have respectively three to four times more chances of being screened late than their French counterparts. This result does not necessarily mean that the French screening system has failed: these persons may have arrived in France recently and been tested positive although they were infected years ago. This cannot be shown through the data from mandatory HIV and AIDS notification since arrival dates of foreign-born people are not collected in France, but other data suggest this possibility. The "Retard" survey shows that the majority of African women who were tested late were screened the year following their arrival. The ANRS-Vespa survey on people living with AIDS finds the same results [4].

- In general, DUs are well screened for HIV as shown by the available data (mandatory notification, Coquelicot survey).

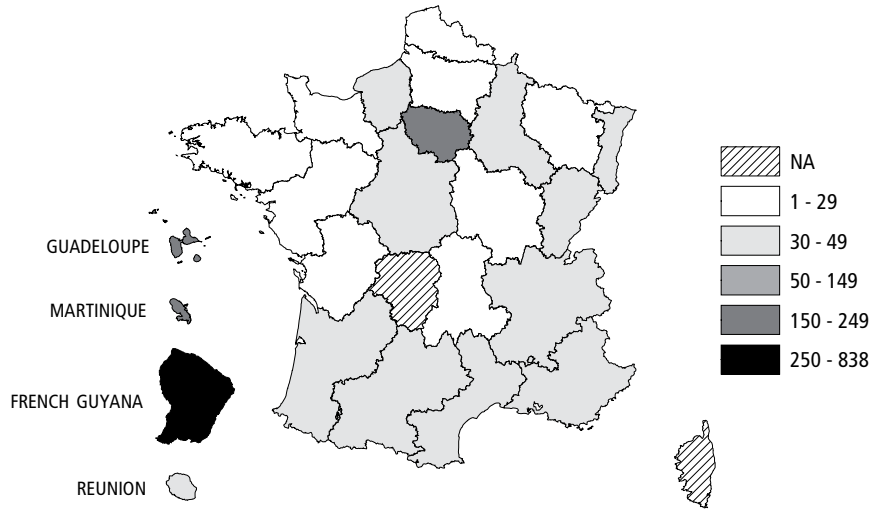
- Another positive aspect is the adequation between the extent of the epidemic in some regions and the quantity of tests performed: the French departments of America (DFA: Guadeloupe, Martinique and French Guyana), the Paris area, and Provence-Alpes-Côte d'Azur (PACA) departments, regions very affected historically by the epidemic, are also the regions that "screen" the most (see next paragraph). Despite the importance of the system, some people still ignore whether they are seropositive, although their number is difficult to estimate.

For more information, consult the chapters from the report:
- "HIV screening activities" by Françoise Cazein (f.cazein@invs.sante.fr);
- "Free and anonymous HIV screening" by Stéphane Le Vu (s.levu@invs.sante.fr).

HIV infection reveals important regional differences in France

Some regions are clearly singled out, either by the extent of the epidemic (figure 4), or by the characteristics of the populations affected, in terms of nationality (high proportion of persons with foreign nationality) or of transmission mode (predominantly DUs or MSMs), namely in the Paris area, in the French departments of America (Guadeloupe, Martinique, French Guyana) and in the PACA region.

Figure 4 Mean annual rate of new HIV diagnoses in 2003-2005 per million inhabitants (France, data by 31-03-2006 adjusted for reporting delays)



NA: not available because correction measures are impossible due to the combination of the low number of new HIV diagnoses and irregular reporting delays.

The Paris area marks itself out by the extent of its epidemic and by its high proportion of inhabitants with foreign nationality (60% of the total number of new HIV diagnoses). It actually accounts for half of all new HIV diagnoses reported since 2003, and by 31 December 2005 had cumulated a total of nearly 12,000 people living with AIDS. In blood donors, HIV prevalence was significantly higher in the Paris area than in the rest of the country from 2000 to 2005. Nationals from sub-Saharan Africa are very important in Paris area, since one new HIV diagnosis out of two concerns an African person. This situation is not unusual, since the INSEE statistics report that 60% of African residents live in the Paris area. DUs living in the Paris area are also deeply affected by HIV, even though HIV prevalence decreased from 21% to 11% (CI 95%: 6-19) between the 1998 and 2004 surveys (even if those two surveys cannot strictly be compared). Most of these infections occurred several years ago.

The Paris area is also marked by the emergence of STIs outbreaks among MSMs, such as syphilis at the end of 2000 or LGV in 2004, most other areas being affected later. Resurgence of syphilis in MSMs pushed the authorities to launch an incentive screening campaign among MSMs in the middle of 2002. More recently, in the course of 2004, an acute hepatitis C "cluster" was identified among seropositive MSMs in several Parisian hospitals, which contributed in raising clinicians'awareness for systematic screening for hepatitis C in case of clinical or biological symptoms. The many ways of meeting people in Paris, paired with the importance of the gay community in Paris and its surrounding area, seem to be contributing factors in these outbreaks.

The DFA play a particular role, partly because of their geographical situation. They represent an attractive area for the less developed neighbouring countries. They account for 7% of all AIDS cases between 1996 and 2005 and 8% of new HIV diagnoses (2003-2005). People are mainly infected through heterosexual intercourse and the proportion of foreigners among HIV or AIDS diagnoses is high (nearly 50%). Similarly, HIV prevalence in blood donors remains higher in this region than in metropolitan France. Differences can also be distinguished within DFAs: an increasing epidemic gradient is emerging between Martinique, Guadeloupe and French Guyana. The persistence of this gradient is observed regardless of the indicators or databases used: the notification rate for HIV and AIDS (per million inhabitants), the proportion of foreigners among HIV notifications, and the rate of positive serologies per million inhabitants are higher in French Guyana (respectively 838, 323, 68%, 2,597) than in Guadeloupe (249, 95, 49%, 971) and in Martinique (175, 75, 8%, 432).

The PACA region is specific on several accounts: the epidemic started in the early 1980s; it is marked by the importance of infections caused by drug use and by a more important rate of individuals originating from North Africa. As a matter of fact, the use of injecting drug is historically frequent in French southern regions. In 2004, HIV seroprevalence in DUs was much higher in Marseilles than in Lille (32% *vs* 1%). However, risk reduction policies resulted in the declining rate of HIV infections in DUs in this region. Consequently, this area which accounted for 13% of AIDS cases in 1996, only accounts for 7% in 2005. This trend is also found in the blood donors from the PACA region between 1996 and 2005: prior to 2000, HIV prevalence was higher in blood donors from PACA than from other regions and since 2000, this difference has not been found again. A proportion of positive serologies below the national average has been observed for a few years (161/million inhabitants in PACA in 2005). And yet, the PACA region is known for its high level of screening activities, whether in private or hospital laboratories (110 tests/ 1,000 inhabitants in 2005) or in VCT facilities (7 tests/1,000 inhabitants in 2005). This high screening level has been stable for several years.

For more information, consult the chapters from the report:
- "HIV surveillance: mandatory notification and virological surveillance" by Françoise Cazein (f.cazein@invs.sante.fr) and Roselyne Pinget;
- "HIV screening activities" by Françoise Cazein (f.cazein@invs.sante.fr);
- "Free and anonymous HIV screening" by Stéphane Le Vu (s.levu@invs.sante.fr).

These last ten years have also been marked by the development of surveillance of...

...HIV and recent infections...

The introduction of highly active antiretroviral associations in 1996 not only changed HIV prognosis but also epidemiological surveillance: surveillance of inaugural manifestations of AIDS does not reflect the epidemic dynamics any longer, thus the importance of the implementation of HIV mandatory notification, one of the major surveillance tools. It took several years of collaboration between health professionals, civil society (including associations involved in the fight against AIDS) and experts in electronic security to make the idea of mandatory notification acceptable and to implement such a system. This new system, set up in early 2003, introduced an essential principle that removed all the previous obstacles to HIV notification: the full respect for individuals' anonymity. Nevertheless, the complexity of the system resulted in a much higher rate of underreporting (between 30% and 40%) than the one observed with AIDS notification in the late 1990s (15%). Despite this limitation, the system remains very performing thanks to the virological surveillance of recent infections and circulating viruses, which was paired with the mandatory notification of HIV as soon as it was implemented. Virological surveillance contributes to assessing the proportion of contaminations that occurred within the last six months using a test of recent infection, and to virus characterization (in terms of virus types, HIV-1 or HIV-2, group O or M, and B or non-B subtype) of persons who discover their seropositive status.

...circulating viruses...

Monitoring virus circulation is interesting since it contributes to a better understanding of transmission patterns: historically, the HIV-1 subtype B was largely predominant in France, whereas in sub-Saharan Africa, the majority of subtypes are non-B. For several years, a change in the distribution of viral subtypes among seropositive persons has been observed, with an increase of non-B subtypes in French people (from 15% in 1996-1998 according to the AC 11 laboratory network [6] to 49% in 2005 according to virological surveillance). This change is also observed in blood donors, in whom the proportion of non-B subtypes increased from 6% for 1985-1987 to 31% for 2003-2005. Similarly, Africans who discover their seropositive status are not all infected by non-B subtypes, considering that nearly 22% of them were infected by the B subtype in 2003-2005. This suggests they were contaminated in France rather than on the African continent. The combination of those two phenomena reveals some kind of intricacy between the French and the African populations.

For more information, consult the chapter from the report:
- "HIV surveillance: mandatory notification and virological surveillance" by Françoise Cazein (f.cazein@invs.sante.fr) and Roselyne Pinget.

...and HIV co-infection with hepatitis viruses

With a longer life expectancy for seropositive patients, hepatitis B and C associated co-morbidities are becoming a major concern in terms of health care, and require appropriate surveillance. In HIV positive persons, chronic hepatitis B prevalence reached 7% in 2004. Hepatitis C prevalence is high, from 24% to 28% depending on surveys, but it is observed mainly in seropositive DUs, since they represent more than 70% of HIV and HCV coinfections. HCV coinfection complicates the care of these patients, and demands a specific assessment for coinfection and hepatic fibrosis. The performance of this assessment seems to have increased between 2000 and 2004 with the use of less invasive techniques than hepatic biopsy.

For more information, consult the chapter from the report:
- "Hepatitis B and C viruses among people infected by HIV" by Christine Larsen (c.larsen@invs.sante.fr) and Élisabeth Delarocque-Astagneau.

Prevention measures have also been reinforced in the field of...

...prevention of accidents due to blood exposures in health care settings...

In terms of prevention, much progress has been made to reduce accidents linked to blood exposures in health facilities. Surveillance of occupational HIV infections, started in 1991, confirms the impact of risk reduction policies in medical staff. The number of occupational infections observed between 1996 and 2005 (4 documented seroconversions and 2 suspected infections) is relatively low. However, half of them could have been avoided, either through the use of standard precautions or through maximal care of the accident.

For more information, consult the chapters from the report:
- "HIV post exposure prophylaxis: national assessment and cost-effectiveness study" by Florence Lot (f.lot@invs.sante.fr), Christine Larsen and Magid Herida;
- "Surveillance of occupational infections with HIV, HCV and HBV in health care workers" by Florence Lot (f.lot@invs.sante.fr).

...and blood transfusion safety

In France, in the field of blood transfusion, residual risk of transmission of HIV continued to decline after 1996, thanks to the selection of blood donors and to the progress performed in the biological qualification of blood donations. Over the 2003-2005 period, the residual risk was very low, since it was estimated at one infected donation per 2.6 million donations [CI 95%:0-1/750,000]. With an HIV prevalence 40 times lower than the one estimated in the general population, blood donors represent a low risk population. However, this steady prevalence since 1998 shows that the selection of donors at the time of donation must not slacken.

For more information, consult the chapter from the report:
- "Surveillance of HIV in blood donors" by Josiane Pillonel (j.pillonel@invs.sante.fr).

The situation of France within Europe

The epidemiological situation as regards HIV and STIs is not very different in France compared to her European neighbours [7]. Actually, western European countries generally share the same results: the decrease of AIDS cases and deaths since the introduction of highly active treatments, the increase of infected MSMs and heterosexuals,

and the decline of new diagnoses in DUs (except in Portugal where the epidemic in DUs is more recent). In Europe, AIDS cases have constantly decreased from 9,928 cases (30 cases per million inhabitants) in 1998 to 6,432 cases (19 cases per million) in 2005. Meanwhile, the rate of new HIV diagnoses per million inhabitants increased twofold between 1998 and 2005, from 42 cases to 74 cases (from 8,626 to 15,678 cases). The number of cases in bisexual MSMs increased by 55%, and more than doubled between 1998 and 2005 in heterosexuals (from 3,000 cases to 7,000 cases). In Europe, the increase of new diagnoses is partly related to the increase in the number of persons from Africa. They represent over half of the new diagnoses in heterosexuals in the United Kingdom, Belgium, Sweden or Germany. In France, the current situation is similar to the one in the United Kingdom: the annual number of new HIV diagnoses is quite comparable (around 7,000), and the proportion of Africans among heterosexuals is high. Both countries have close historical ties with African countries, where HIV prevalence is high. In early 2000, syphilis and LGV outbreaks occurred in all western European countries, mainly in HIV positive MSMs [8-16].

While trends between western European countries are comparable, the extent of the epidemic varies from one region to the other. Historically, southern countries (Spain, Italy, and France) are the most affected by HIV/AIDs in Europe. Spain (72,000 cases), Italy (56,000) and France (61,000) have cumulated more AIDS cases since the beginning of the epidemic as of 31 December 2005 than Germany (24,500) or the United Kingdom (22,000). Despite the extent of the epidemic, Spain and Italy have not implemented any national mandatory notification system for HIV so far.

Surveillance data is necessary for public health policies

Epidemiological data is essential to lead policies against HIV/AIDS. Consequently, the increase of the number of foreign AIDS patients at the end of the 1990s, namely Africans, resulted in increasing the visibility of migrants through communication campaigns intended to a wide audience in the early 2000s, and to expand specific supporting tools for migrants and health care professionals. Data on HIV later confirmed the results of AIDS surveillance and revealed the importance of foreigners, which shed a new light on screening practices. A specific national programme to fight against AIDS and destined to migrants living in France was then set up by the Ministry of Health over the 2004-2006 period. The incentive screening campaigns implemented by INPES (Institut national de prévention et d'éducation pour la santé), which have been performed those last few years seem to yield some positive results, as screening appears to be performed earlier than before in the sub-Saharan African population.

MSMs have long been the target of prevention and information messages. The higher than average level of education found in this population does not conceal their vulnerability in terms of prevention behaviors. Since 2000, data from behavioral surveys and from the mandatory notification system encourages INPES to reinforce its communication strategy, to renew prevention tools and messages, to conduct specific campaigns intended to affected subjects. Gay associations have used surveillance data for their own campaigns: "One MSM out of ten is HIV infected; more than four MSMs discover their seropositive status daily. AIDS: when do we stop?" (Display campaign of the Collectif des associations, 2004).

In DUs, epidemiological data has also contributed to reform prevention messages. These last few years, the PSE and Coquelicot surveys have contributed to renew prevention messages issued by the INPES and destined to DUs, while insisting on the transmission risks related to the sharing of small material and to the reuse of one's own syringe. Data from the Coquelicot survey has also shown the extremely high rate of sharing crack pipes among crack consumers. These alarming results reinforced the attention given to crack consumers in terms of public health actions. This epidemiological data has finally allowed to assess the harm reduction policy and to show its efficiency over the decrease of HIV transmission in a context where this policy has sometimes been questioned.

Over the last 10 years, surveillance of STIs has contributed to raise the alert face to the emergence of antibiotic resistance (namely to ciprofloxacin) in the treatment of gonococcal infections, or in the slow but continuous increase of Chlamydia infections in young women, which is also worrying. Data from the syphilis and LGV surveillance systems were the opportunity for INPES to launch new prevention and information campaigns in gay environments: "Syphilis alert" (in 2003, 2003 and 2004) "Tonight, you may have a date with LGV" (INPES 2005) and for health professionals: "HIV and STI screening" (Reference for your practice, 2005). Their main objectives are to guide public health actions, such as the campaign inciting syphilis screening, and to recommend Chlamydia testing among young women.

Supplementing these policies, links between research and public health have been reinforced, thanks namely to the Agence nationale de recherches sur le sida et les hépatites (ANRS). This collaboration has enabled to initiate innovating surveys such as the Coquelicot survey among DUs or to sustain a survey system such as the Presse Gay surveys. The financial and scientific support of ANRS, through the surveys steering committees and coordinated actions (CA) is essential. Collaboration within CA 23 between Inserm, the NRC for HIV and the InVS have resulted in the validation of the biological test able to identify recent infections, and used in routine for exclusively and solely public health purposes.

The implementation of specific surveys, such as the Coquelicot survey, or the introduction of mandatory notification of HIV and of the recent infection test did not happen without any difficulty. These systems have led to scale up individual and "collective" public health interests. Individual interests are defended by committees (French Data Protection Authority, National Consultative Ethics Committee, National AIDS Committee), and by civil society itself, through associations involved in the fight against AIDS, and consumers associations. In the fight against HIV, associations have always played a particularly important role capable of influencing political or technical decisions. Such was the case in July 1999, when the launching of a pilot project for the mandatory notification of AIDS was suspended under the pressure from associations, which deemed that the system did not give enough protection to individuals. Then associations were more involved in the process that created mandatory HIV notification in France. This is how individual interests (including the protection of anonymity) were in the limelight of the system demands, sometimes to the detriment of public health. The mandatory notification system is more complex, less reactive, with a greater underreporting than in other countries like Germany or the United Kingdom. However, it is clear that this system is probably the one that gives, at a European level, maximal safety to data collected, and therefore to individuals.

Moreover, France is the only country to dispose of virological data allowing to detect recent infections, and to follow up viral diversity at national level and in the context of permanent surveillance. The results of the recent infection test, weighted by other parameters such as testing behaviors, should allow assessing HIV incidence, meaning determining the number of new infections in France. But the road is still long as many methodological obstacles remain, that are largely shared by all the countries using this approach. In terms of research, in addition to estimating incidence, cost-efficiency approaches for screening strategies like those developed in the USA [17,18] are necessary. They will allow to better target the frequency of tests depending on behaviors, and to better assess the screening system in France. Other surveillance perspectives are emerging for the next ten years, like the ones consisting in coupling antiretroviral resistance with mandatory notification, implementing more seroprevalence surveys, and developing surveillance systems for vulnerable populations like inmates and prostitutes. One of the stakes for the years to come will also be to benefit from the new framework of screening and health care of STIs by national authorities in France to reinforce surveillance of other STIs.

The excecutive summary is written by Caroline Semaille-Safar (c.semaille@invs.sante.fr).

The full report is downloadable at the InVS website (www.invs.sante.fr/publications/2007/10ans_VIH). The report is in French only.

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Report contents

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