Lessons from the History of the Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome Epidemic among Spanish Drug Injectors

L. De la Fuente,1,2 M. J. Bravo,1 G. Barrio,1 F. Parras,1 M. Suárez,1 A. Rodés,1 and I. Noguer1

1Secretaría del Plan Nacional sobre el Sida, Ministerio de Sanidad y Consumo, 2Centro Nacional de Epidemiología, Instituto de Salud Carlos III, and 3Centro Universitario de Salud Pública, Madrid, Spain

In Spain, ~10 years passed between the time when human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS) harm-reduction programs should have been developed with sufficient coverage to have an optimum impact on public health (before the HIV/AIDS epidemic’s explosion in 1984) and the date of their actual implementation. This delay yielded an enormous cost for the country. The introduction of the virus in drug injector networks during a period of widespread diffusion of heroin injection and the lack of political awareness of the growing problem were 2 important factors that contributed to the important diffusion of the HIV infection among Spanish injection drug users. Lessons can be learned that may be of great interest in countries or territories facing similar challenges now and in the future.

By the end of the year 2000, several indicators had shown Spain to be a special country in regard to the HIV infection/AIDS epidemic: of all the developed countries, it had the highest annual rate of AIDS cases in injection drug users (IDUs; 113 cases per million population in 1994). Of the countries in Europe, Spain had the largest cumulative number of AIDS cases (37,861 by the end of 2000) and the highest number of reported cases in 2000 (1326, followed by Portugal with 596) [1]. At present, however, there are indications that the rate of new HIV infections may be similar to those of several other European countries [2].

Among the main factors influencing the evolution of the HIV infection/AIDS epidemic in Spain in the 1990s were the explosive nature of the epidemic in its beginnings and the fact that it began during a period of widespread diffusion of heroin injection. The delay in implementing specific public health measures aimed at controlling the epidemic, as well as the fact that the measures adopted in the early 1990s were insufficient to confront a problem of such magnitude. In fact, the early response to the drug injection problem focused on a policy of public safety and image (controlling the supply and treatments focusing on abstinence) rather than a policy from the perspective of public health (methadone treatment and harm-reduction programs).

This article reviews and analyzes the various determinants of the HIV infection/AIDS epidemic in Spain and compares this country’s experience with what happened in other countries of Europe.

EPIDEMIC CURVE OF HIV INFECTION IN SPANISH DRUG INJECTORS AND EVIDENCE AVAILABLE AT DIFFERENT POINTS IN THE EPIDEMIC

Today, it is possible to estimate quite precisely the epidemic curve of HIV infection in the period before highly active antiretroviral therapy was introduced. This has been done for countries of the European Union,
with estimates for periods up to 1993 [3], and for a longer period in Spain [2]. Figure 1 shows the estimate made for IDUs, which was not published at the time. It also shows the evolution of methadone treatment, one of the responses that has been shown to be most effective in controlling the epidemic among IDUs. Looking at the annual incidence curve for new infections, the expansion of the epidemic in Spain was already incipient by 1983 and had reached dizzying levels of growth in 1984, and especially in 1985 and 1986, the years in which the highest incidences were reached (16,000 persons were infected in 1985) [2]. In the subsequent 2 years, there was a strong and practically continuous decline in the number of new infections. The evolution of the epidemic presented by Downs et al. [3] seems to be quite similar for IDUs in Spain, Italy, France, and Germany. However, the evolution for Italy, France, and Germany differs in that the highest incidences reached were much lower than those in Spain: 2 times as low in Italy, 5 times lower in France, and >20 times lower in Germany (table 1) [3]. In addition, the curves for The Netherlands and the United Kingdom show a slower and more prolonged increase, followed by a leveling off that has been maintained, with maximum rates 50 times lower than in Spain. This epidemiological evidence could only be obtained retrospectively in the latter half of the 1990s.

What evidence was available in the first half of the 1980s, which would have been the most opportune time to develop public health policies? The number of AIDS cases in IDUs in Spain was quite low until 1984. The numbers increased in 1985 and 1986, reaching 109 and 307 cases, respectively (figure 1), although the delay in availability of data meant that it was not easy to have a clear idea of the magnitude of the problem until 1986. Furthermore, during these years (1985–1986) the first studies were published showing that the prevalence of HIV infection in different subgroups [4] of IDUs was >40%, numbers then only comparable to those of some cities in Italy and North America. The data on risk behavior for the transmission of HIV infection in Spanish IDUs were not published until 3 or 4 years afterward. In any case, the 1986 figures on the prevalence of HIV infection made it possible to foresee, in a general way, the enormous potential for the spread of the epidemic. The data that emerged in the following years on AIDS cases diagnosed and the prevalence of HIV infection and risk behavior only confirmed what any analyst minimally accustomed to interpreting epidemiological data could have foreseen in 1986.

**SOCIOPOLITICAL CONTEXT OF THE RAPID EXPANSION OF THE INJECTED ROUTE FOR HEROIN ADMINISTRATION**

The year 1975, during the time of the “oil crisis,” marked the end of an authoritarian regime notable for its extreme cultural and economic isolation. During the subsequent 5 years, Spain underwent the transformation to a government of democratic liberties in a climate of great effervescence and expectations of social change, especially among youth. Many of the young people who had opposed the dictatorship, however, found that their expectations of political and social change were only slowly and partly met. This situation, coupled with a severe economic recession, helped generate a climate of exasperation and frustration among large groups of young people [5]. In this context,
injection heroin use spread. In 1978, the injected route for the administration of illegal drugs was infrequently used in Spain, yet, by 1982, it was used, in all likelihood, by tens of thousands of persons. This practice became popularized in an abrupt process, "like fire in dry grass," in the words of a heroin injector [5, p. 135]. It was not the sum of isolated individual decisions but a very rapid collective phenomenon, which probably began at the same time in different parts of Spain, affecting all social levels, but primarily the most underprivileged classes in the large cities. The sharing of injection material was, from the beginning, probably the norm [5]. A similar process has been described in other countries [6, 7].

### PREVENTION POLICIES: A DRAMATIC TEMPORAL MISALIGNMENT WITH THE SPREAD OF THE EPIDEMIC

Even before 1985, the spread of heroin injection among young people had already produced considerable social alarm in Spain, primarily because of the insecurity provoked by robberies and assaults by IDUs. In this context, the National Plan on Drugs (Plan Nacional sobre Drogas) was created in 1985 [8] to respond to the social and health problems related to illegal drug use. Arguing the need to control the appropriate use of methadone treatment and to prevent its diversion to the black market, one of the organization’s first measures was to pass a regulation in 1985 [9], applicable throughout the country, provoking a drastic restriction in methadone treatment, which had been introduced just 2 years previously (figure 1). This measure was consistent with the philosophy of developing a policy aimed exclusively at abstinence, giving priority to detoxification and drug-free programs. Furthermore, it responded to the expectations and demands of all the political parties and of the majority of nongovernmental organizations and professionals involved in drug prevention and care. Priority was given to a law-and-order policy over one of public health. The regulation had a sweeping effect, and, by 1986, there were practically no patients receiving methadone treatment in Spain. Today, the dramatic temporal concurrence (1985–1986) between the almost total restriction of opiate-substitution treatments and the peak of the HIV infection/AIDS epidemic among IDUs in Spain seems astonishing. In addition, in the field of health care, most professionals of that time “fled from” IDUs, because they did not consider themselves able to satisfy their demands. Besides, most professionals working in drug treatment centers supported the objective of abstinence as the first priority for their patients, forgetting or giving less importance to the threat of HIV infection. Perhaps only public health professionals and some clinical physicians involved in caring for these patients were conscious of the dimensions of the HIV infection/AIDS epidemic and of the measures needed to control and reduce its impact. However, these professionals may not have had either the courage or sufficient clarity of ideas to explain convincingly [10] the risks of failing to make public health interventions a high priority.

Even in the early 1980s, Spain, unlike other western European countries, did not require a medical prescription to obtain syringes, although many pharmacies refused to dispense them to persons who looked suspiciously like heroin injectors. Between 1985 and 1990, there was a considerable growth in drug treatment centers aimed exclusively at abstinence. In 1990, 5 years after the previous regulation, when the damage to health was evident (7616 cumulative AIDS cases among IDUs) [11], the Plan Nacional sobre Drogas again passed methadone treatment legislation. Even then, considerable resistance to these kinds of treatments persisted among professionals in treatment centers, nongovernmental organizations working in this field, political parties, and large sectors of society [10]. The new regulation opened the doors to the creation of new places for methadone treatment. However, most persons responsible for health and drug policy in many autonomous communities (regions with autonomy in the organization of prevention and

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**Table 1. Estimates of the maximum annual incidences and temporal characteristics of the HIV epidemic in 2 transmission groups in 7 European countries.**

<table>
<thead>
<tr>
<th>Country</th>
<th>Peak of HIV epidemic among IDUs</th>
<th>Maximum HIV annual incidence among IDUs</th>
<th>Peak of HIV epidemic among HBM</th>
<th>Maximum HIV annual incidence among HBM</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>1984</td>
<td>~14</td>
<td>1982</td>
<td>~23</td>
</tr>
<tr>
<td>Germany</td>
<td>1983</td>
<td>~2.8</td>
<td>1982</td>
<td>~9.5</td>
</tr>
<tr>
<td>Italy</td>
<td>1984</td>
<td>~32</td>
<td>1984</td>
<td>~4</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>1984</td>
<td>1.5</td>
<td>1983</td>
<td>11</td>
</tr>
<tr>
<td>Portugal</td>
<td>1990</td>
<td>16</td>
<td>1984</td>
<td>5</td>
</tr>
<tr>
<td>Spain</td>
<td>1984</td>
<td>79</td>
<td>1984</td>
<td>11</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>1985</td>
<td>1</td>
<td>1982</td>
<td>10.5</td>
</tr>
</tbody>
</table>

**NOTE.** Rates are cases per 100,000 population. Data were obtained from published graphs. HBM, homosexual/bisexual men; IDUs, injection drug users.
health care) continued to be suspicious of these kinds of treatments, and they did not come to play a real role until 1993 or 1994. By then, the reality of the HIV infection/AIDS epidemic was already enormous and obvious.

Consequently, many methadone-maintenance programs were established. In 1990, 3000 patients were in this type of treatment; in 1995, there were nearly 29,000, and, in 2000, there were >78,000 (figure 1) [12]. At present, these treatments are easily available in all autonomous communities and in all prisons, although the speed with which they have been developed has varied widely among autonomous communities. Of note is the case of the Balearic Islands (the autonomous community with the highest rate of AIDS cases), which did not effectively implement these programs until 1996 or 1997 [13].

Syringe-exchange programs have been the second main activity of the harm-reduction programs. Although the first Spanish syringe-exchange program began in 1989, these programs did not become widespread until several years later; they were developed almost in parallel with the methadone-maintenance programs. The very small number of exchange sites in 1991 and 1992 rose to 451 in 1996 and to 1175 in 2000 [14]. Recently, 2 safe injection rooms were established, one in Madrid and the other in Barcelona, along with an experimental heroin-maintenance program in Andalusia. The philosophy of harm reduction is now widely accepted by professionals and has made its way into the communications media.

Currently, the rate of new infections in Spain seems to be quite similar to those of other European countries. To understand this favorable trend, one must also take into account a phenomenon that occurred most notably during the 1990s—the substitution of the injecting route with the pulmonary route for heroin consumption. Currently, the use of the injected route predominates only in northeastern Spain and the Balearic Islands. This was an important factor that contributed to the control of the HIV epidemic. However, the existence of a large group of heroin smokers—and to a lesser extent, of heroin sniffers—continues to represent a potential risk for HIV infection, because changes in the drug’s purity or price on the black market could potentially lead to renewed use of injection, because it is a more efficient route.

THE HIV EPIDEMIC IN THE INTERNATIONAL CONTEXT: VARIATIONS IN ITS EARLY EPIDEMIOLOGY AND IN THE SPEED OF THE PREVENTIVE RESPONSE

Spain has clearly made a large investment in harm-reduction programs, but it is also clear that they were developed too late. About 10 years passed between the time when these programs should have been developed with sufficient coverage to have an optimum impact on public health (before the epidemic’s explosion in 1984) and their actual implementation. It was practically impossible to have intervened at the time when they would have been most effective (1983–1984). By 1986, however, enough data and information already existed to foresee what was coming and to have an idea of the most effective measures to control the epidemic. Something certainly failed when preventive public health measures did not exist until 1993 and 1994 on a scale minimally comparable to the severity and extension of the epidemic of infection in IDUs.

Other countries reacted more quickly. In 1987, the Advisory Council on Misuse of Drugs of the United Kingdom recognized that the HIV infection/AIDS epidemic was a greater challenge to public health than drug use itself [15]. Consistent with this recommendation, the British government quickly instituted a pilot plan of syringe-exchange programs, which was subsequently extended. Surprisingly, this decision was made by a government supporting the “War on Drugs” and in a country where rates of AIDS and prevalences of HIV infection among IDUs were, except in the case of the city of Edinburgh, much lower than those in Spain. Similar measures were taken in Amsterdam [16] and Australia [17].

Compared with other European countries where HIV infection among IDUs has produced much less harm, a series of historical and epidemiological conditions can be identified that probably played a decisive role in the epidemic’s expansion in Spain and in the difficulties of instituting control measures before the epidemic reached its peak during 1984–1985. The high prevalence of injection drug use and injecting risk behavior (needle sharing and other practices) in the early 1980s in Spain made it possible for infection to spread more widely and have a greater impact on the population once the virus was introduced. It is likely that the lesser spread of the epidemic in some countries, often considered an indicator of the effectiveness of their policies, was in large measure facilitated by specific characteristics of the epidemic of the use of the injected route for the consumption of illegal drugs. It may be, for example, that whereas in the countries of southern Europe, the epidemic of injection drug use was at its height (Spain) or beginning to spread (Portugal), in other countries it was already on the decline with regard to the incorporation of new IDUs. It is also possible that the massive transition in the route of heroin administration, from the intravenous to the pulmonary route, began later in Spain, where it occurred primarily after the spread of HIV infection among IDUs [18]. This fact suggests that the effectiveness [19, 20] of the implementation of harm-reduction programs in these countries might have been overestimated.

By reconstructing the epidemic curves of HIV infection in IDUs and homosexual and bisexual men [3], it can be seen that in both groups the epidemic began, and even reached its peak, before awareness of the seriousness of the problem would
have been possible (even before the availability of the diagnostic test) and, therefore, before it was possible to intervene (table 1). In Spain, France, Italy, Germany, the United Kingdom, and The Netherlands, the epidemic of HIV infection reached the highest annual incidences among IDUs between 1982 and 1985. The first country in Europe to react to the HIV epidemic among IDUs was the United Kingdom in 1987. In Amsterdam, the Junkie Union implemented the first syringe-exchange program in 1984 as a result of an epidemic of hepatitis B virus infection among IDUs. In subsequent years, the municipal health authorities of Amsterdam would take up this program again to control the epidemic of HIV infection. Although the United Kingdom’s rapid reaction may have been a factor in the more contained epidemic in that country, the dramatic differences between Spain and the United Kingdom, Germany, or The Netherlands in the magnitude of the epidemic (e.g., maximum annual incidence of infection) in 1984, 1985, and subsequent years [3] would have required more highly decisive attitudes than in the United Kingdom.

Among the conditions that we have termed “historical,” which differentiate the situation in Spain with respect to other countries, is the total absence of a health care policy focusing specifically on the problem of opiate addiction treatment. Since the 1920s, in the United Kingdom, there has been, although in a limited form, a treatment alternative for these types of addicts that includes substitution with opiates [21, 22]; as a result, these patients could have a certain historical tradition of contact with the health services. In a similar vein, it should be noted that the ability of Dutch IDUs to form an association in 1984 marks a clear difference with respect to the awareness of rights that Spanish IDUs were willing to defend [16].

Portugal has had much the same problem as Spain. The Portuguese also experienced an epidemic of use of the injected route, later than in the case of Spain. Although the prevalence of HIV infection among IDUs in the 1980s was not very high, the health authorities should have reacted given the serious extent of the problem in Spain and Portugal’s geographic proximity and the obvious existence of contacts between IDUs in the 2 countries. It could be said that the spread of infection among IDUs in Portugal was a foregone conclusion. Downs et al. [3] estimate that 1990 was the height of the epidemic in Portugal, 4 or 5 years later than in Spain (table 1).

**SOME LESSONS FROM THE SPANISH EXPERIENCE SUPPORTED BY EVENTS IN OTHER COUNTRIES**

Subsequent to the events in Spain, other countries or territories have also suffered serious epidemics that have had an extremely rapid onset. In Bangkok, the prevalence of HIV infection among IDUs rose from 2% in 1987 to 43% in 1988. The injected route of administration is spreading in large parts of these countries, some of which have serious HIV epidemics among IDUs [23]. The fact that drug traffic routes pass through some of these countries will probably make it that much more difficult to control the spread of HIV [24]. In Eastern Europe, the severe economic and social changes in the early 1990s contributed to the dynamic expansion of injection drug use. HIV infection is currently spreading to new territories and countries, although the absolute number of cases is still small [1]. In Brazil, Argentina, and Uruguay, the growing use of the injected route has been responsible for the pattern of the spread of HIV infection. There are no reliable quantitative data on trends in injected drug use in the Southern Cone, but professionals in the health and social services report a possible increasing trend in Colombia, Paraguay, and Chile. What is certain is that cocaine use expanded throughout the Southern Cone during the 1990s [25].

The ferocious growth of the HIV epidemic in Spain occurred at a time when there was still limited experience with ways to control the spread of a bloodborne virus among IDUs. Today, there is clear evidence about the interventions that can help avoid or control the spread of HIV infection among IDUs [26]. One might ask, when can it be said that the spread of HIV infection/AIDS among IDUs in a certain area constitutes an epidemic or indicates that one is imminent? When should action be taken? What warning signals should guide early interventions?

No single factor can be considered responsible for setting off an epidemic of HIV infection/AIDS or for its severity. Most likely, once the first cases of infection by bloodborne transmission have been detected, serious damage can be avoided only by acting very quickly and implementing measures with sufficient coverage to obtain a public health impact. Certain conditions may make it difficult to control and prevent the epidemic, such as proximity to drug traffic routes or places of production, important economic, social, and lifestyle changes, low cultural level and low knowledge of the health risks of certain practices, high or increasing prevalence of injection drug use, risk practices for injection (needle sharing and others), high prevalence of use of substances by nonparenteral routes, territorial proximity to elevated prevalences of injecting use, and absence of previous experience of treatment interventions to control the harm associated with drug use and treatment networks focusing only on abstinence.

The diffusion of bloodborne viruses in America, Europe, and Asia, whether in developed or developing countries, shows that no place is immune to the phenomenon of drug use and its accompanying dangers. It is also known that the combination of specific measures aimed at preventing HIV infection among IDUs is an effective strategy. Nevertheless, epidemics with sudden onset and serious consequences, such as the one in Spain...
during the 1980s, continue to take place 20 years later. No country can feel protected, given the risk of the spread of HIV and other bloodborne pathogens among IDUs. In addition to implementing epidemiological warning systems to monitor the epidemic, more research is needed about how to prevent drug users from starting to inject or from changing from other routes of administration to the parenteral route [27, 28]. This objective requires measures aimed at non-IDUs with a high risk of taking up the injection route (e.g., smokers and heroin or cocaine sniffers with a high level of dependence) to make them aware of the risk of injection, to help them identify risk situations, to develop arguments and skills to confront proposals to inject, and to avoid or reduce their contact with networks of IDUs. The existence of a network or system of care that integrates different approaches and prioritizes different objectives could be the starting point for working to prevent a hypothetical epidemic of infection with bloodborne pathogens.

References