

PHPRO Spain

Public Health Policy:

TB control program

Background

The latest report from the World Health Organization on tuberculosis (TB), estimates that in 2008 there were between 8.9 and 9.9 million new cases worldwide. Mortality figures are also worrying: in that year between 1.1 and 1.7 million TB patients not infected with HIV died, and between 0.45 and 0.62 million TB patients infected with HIV. It must be noted that these latest deaths are classified as due HIV by the International Statistical Classification of Disease. It also highlights a major global underreporting, since the number of cases reported in the year 2008 was 5.7 million, equivalent to 55-67% of total estimated cases. The burden of this disease accounts for the number of publications it generates: a total of 42,258 publications can be found at Medline in the last 10 years with “tuberculosis” in the title, 23% of them in the past two years, which suggests a growing interest in TB. To face this important disease in Barcelona, it has been of critical importance the creation in 1987 of the Program for Prevention and Control of Tuberculosis, as well as the Research Unit on Tuberculosis of Barcelona (see: <http://www.aspb.es/uitb>) acting as a coordinating center for clinicians, epidemiologists and microbiologists involved in prevention and control of the disease.

Design

The Program for Prevention and Control of Tuberculosis of Barcelona (PPCTB) launched in 1987, is based on an active surveillance system, which has led to a precise monitoring of the incidence of the disease, and makes a good track of cases seeking treatment and study of contacts. In these tasks public health nurses have been very important. During all these years, various difficulties for the proper control of TB have been identified, which have led to adapting the program to the different characteristics of our patients. In the 90s there was an increase of tuberculosis cases because of the drug users infected with HIV. At this point it was very important the inclusion of directly observed treatment of TB in methadone programs. Also, specific programs to control treatment in prisons were established. The massive arrival of people from countries with

a high burden of TB at the beginning of 2000 and the increase in the proportion of immigrants among the patients of the city, made necessary to incorporate community health agents, who act as intermediaries between the immigrant patient and the health system, playing a very important role in the monitoring activities. Finally, in the last two years an important boost to the the TB control has been done through the creation of functional clinical units TB, which track the patient and study their contacts. This work has been the result of coordination between the Barcelona Healthcare Consortium, NGO and other care providers and the Public Health Agency. This new model of care includes the figure of nurse manager, to do the proper monitoring of the patient and contact tracing. The Unit has also allowed the participation of many researchers of Barcelona in clinical trials of the Centers for Disease Control and Prevention in the U.S. and in other multicenter and multidisciplinary projects.

In this report, and thanks to the efforts of all those working in TB in our city and the cooperation obtained from the patients and their contacts, it has been possible to obtain good control indicators with respect to compliance treatment and to studies of contacts. However, the difficulties and uncertainties of this disease continue, therefore we will need to see in the coming years if the current global economic crisis or some other unpredictable factor influences the epidemiology of TB.

TB, as a notifiable disease (EDO) in Barcelona is controlled through an epidemiological surveillance system that obtains information from the following sources: 1) notification of doctors make a diagnosis, 2) reporting of smear and culture positive for mycobacteria by five laboratories in the city: Hospital Vall d'Hebron, Hospital de la Santa Creu i Sant Pau, Hospital Clínic, Laboratori CAP and Reference Laboratory Manso de Catalunya (processing samples: Hospital del Mar and Hospital de l'Esperança, among others), 3) control of mortality register of the city of Barcelona, 4) cross-referencing between the records of TB, HIV-AIDS and Drugs Information System Barcelona (SIDB) of the Public Health Agency of Barcelona (PHAB), 5) TB register of the Generalitat de Catalunya (detection of cases of residents in Barcelona diagnosed and reported out of town).

Epidemiological survey.

Each reported case is investigated through an epidemiological survey, which is conducted by the public health nurses of the Agency of Public Health in collaboration with the physician who diagnosed and controlled by the patient. They verify and analyze the contacts and check if the patient meets treatment. Immigrant patients are also assessed with the collaboration of community health workers to monitor the patient and the study of contacts. When abnormal, the patient and/or their contacts are directed to the doctor that took care of the index case or, if necessary, to the Unit of Prevention and Control of TB in Barcelona (UPCTB). For the purposes of epidemiological surveillance a case of TB is any patient who is prescribed TB treatment, which he maintains until the scheduled time of completion, except if he dies or present serious side effects. Patients who return to starting TB treatment are re-entered in the register as new cases only if more they have been free of treatment for at least one year. Patients with non-tuberculous mycobacteria are considered not to have TB.

Approval

The creation of the Unit was proposed by the Board of the Public Health Agency of Barcelona and approved by the Governing Board of the Health Consortium of Barcelona, executive agency responsible for planning and evaluation of health care and public health services within the metropolitan region of Barcelona.

Implementation

The implementation of the TB program on the field as been coordinated by the Department of Epidemiology of the PHAB, and executed by all the above described relevant stakeholders, organized in several sub-programs, mainly case detection, patients control and prevention.

Sub-program case detection.

The main source of reporting remains the EDO system, with an estimated coverage of 91.1% of all cases, similar to last year. Active surveillance activities conducted by the Epidemiology Service of the ASPB and the reporting of the microbiology laboratories of

tertiary care hospitals continue to be an efficient source complementary to the reporting of cases by physicians, as evidenced by the fact that through this pathway have been detected 10% of cases that otherwise would not have known. At the same time it allows to characterize the bacteriological status of many patients who had already been declared. Sometimes it has been useful to inform the doctor responsible for the case about the microbiological status of patients discharged, pending initiation of treatment.

Sub-program of patient control.

The degree of compliance with TB treatment is considered good enough, achieving through the years percentages above 95%. It should be noted that 6 of the 10 districts of the city have had rates of 100% compliance. The favorable evolution of this indicator is the result of everyday activities of clinicians and the monitoring and control carried out by nurse staff of the Agency of Public Health and health agents of the program; through 24 hours clinical care of low income, social problems patients (Serveis clinics) and through other resources that run the directly observed treatment program in the city (drug abuse clinical centers, prisons, etc.).

In this sense the results at 12 months for patients who began treatment in 2008 were extremely good (87,8%) in previously untreated smear-positive patients, achieving the World Health Organization goal. However, among patients with prison history or homeless, healing rates have been below target. Among homeless people there is a high percentage of previous TB treatment (13%). Recurrence in these groups tends to be associated with treatment failure, which makes necessary the systematic inclusion of TDO scheme. These treatments should be extended to all the vulnerable collectives and neighborhoods to increase the percentage of cases in this mode treatment. Regarding drug resistance, the primary resistance to isoniazid in indigenous is around 5%, while it is 8.7% among immigrants. Therefore, the initial regimen should be provided with 4 drugs. In order to monitor the evolution of resistance is necessary to perform the antibiogram in every patient.

Sub-program prevention.

The study of contacts (SoC) of patients with TB is not as optimal as it should be It is

overall 71.8%, in the forms bacilliferous it was performed in 86.1%, with large differences between indigenous (94.4%) and immigrant (76.9%) population. In the other clinical forms of TB the SoC was lower. The SoC should be improved among not bacilliferous forms, and among patients presenting a risk factor, especially in the immigrant population. For this reason it continues to be very important to maintain and upgrade the equipment and training of public health nursing and community health workers to increase the census and screening of contacts. It should be further promoted the SoC in risk groups, if possible in the week following the diagnosis of the case, as it is necessary to harness the impact of the diagnosis of the disease among contacts and also because it has shown its effectiveness in identifying a large number of secondary cases and therefore to identify candidates to chemoprophylaxis.

Monitoring and evaluation

In 2009 the incidence has decreased by 5.5% over the previous year, bringing down the average annual decline since 2000 by 4%. Notably, the incidence has declined only in males and immigrants. Among indigenous population and women the incidence has increased by 11% compared to 2008. Analyzing the background risk of the patients, the proportion of patients coinfecting with HIV, drug addicts and homeless has increased. TB cases in immigrants have represented in 2009 a proportion of 48.7% of the total (191 patients, 5% lower than 2008) although the incidence in this population has decreased by 14%. Most new cases come from Latin America (43.6%), especially Bolivia, Ecuador and Peru, and Asia (28.3%), mainly from Pakistan. In the district of Ciutat Vella the incidence continues a downward trend. In 2009 recorded the lowest rate of the last ten years. However, it remains still very high, and the incidence among indigenous population in this district has increased in 2009 compared to 2008. The incidence is still high among young adults, especially in men between 20 and 49 years. In these groups HIV infection (18% of cases between 35 and 39 years are infected by HIV) has a strong influence. In addition, incidence in these age groups is high specially among the immigrant population. It also highlights the high incidence in children under 5 years. For the second consecutive year, the incidence of TB in the city has declined but the decline was not uniform, as has been observed in men and immigrants.

Indigenous population does not decrease and the incidence in women has increased. Also noteworthy is the increase in the proportion of patients with social vulnerability, as it makes its management more complex.

To continue the control of TB and to reduce the burden of disease, we must continue to devote efforts to reduce its impact among the identified risk groups (immigrants, infected by HIV). Early diagnosis, availability of TDO in patients at risk, and use of health workers in immigrant patients, act as facilitators of the relationship between the patient and the health system, are some activities that can make the city better endemic .

Final consideration

The incidence in the city has consolidated the decline seen in 2008, but only in immigrants, bringing the average annual decline by 4% (see figures 1 and 2). To maintain and improve the decline should maintain surveillance and control measures specific to nursing staff and community health workers to facilitate the implementation of the measures. The main epidemiological indicators of disease (overall incidence, incidence of smear-positive) remain high, particularly when compared with those of European countries. Therefore, it is essential to support the prevention and control activities, mainly in the communities most affected and most endemic districts through the PPCTB. In the district of Ciutat Vella incidence remains high, both the indigenous population and immigrants. Therefore, the devices active case search, introducing DOT and ECC must be maintained and enhanced. EDO system as a source of case detection has proved once again be the most important, what they emphasize the high degree of involvement and commitment of clinical TB. Finally, the ECC would have to improve, especially in cases of patients who report living alone especially in risk groups.

Figure 1. Trends of tuberculosis by gender in Barcelona, 1987-2009

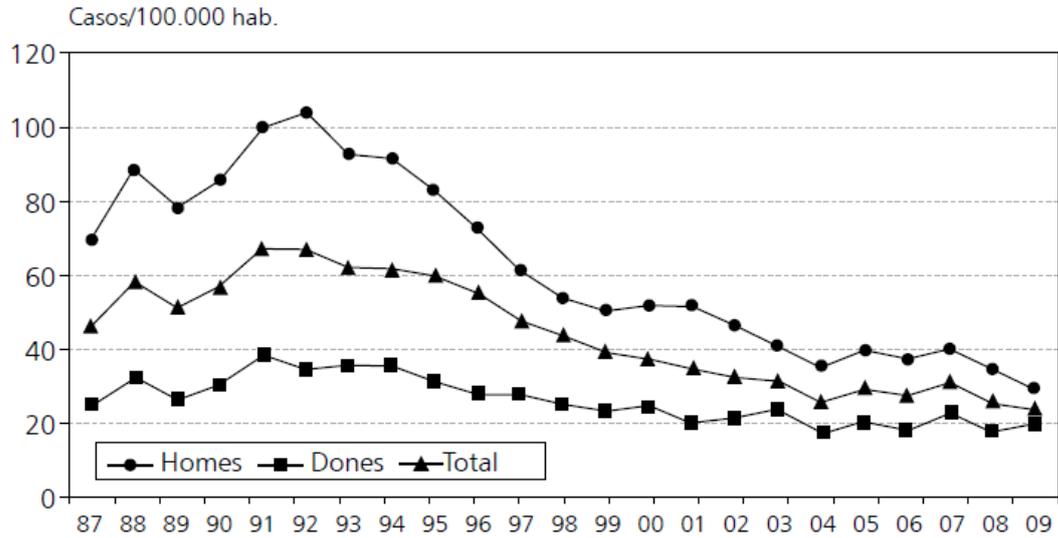


Figure 2. Trends of tuberculosis among immigrants and native population in Barcelona, 1987-2009

