

Bio-behavioural HIV survey in prisons on men and women in Burkina Faso

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RESEARCH

Please cite this paper as: Ky/Ba A, Sanou M, Diallo I, Barry M, Ouedraogo A-S, Catraye J, Sanou P-T, Ki/Toe C, Ky AY, Sanou I, Ouedraogo/Traore R, Sangare L. Bio-behavioural HIV survey in prisons on men and women in Burkina Faso. AMJ 2017;10(5):418–425.

<https://doi.org/10.21767/AMJ.2017.2967>

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ABSTRACT

Background

Despite the severity of the human immunodeficiency virus (HIV) epidemic in Burkina Faso, data on specific groups are scant especially concerning prisoners.

Aims

The objective of this study was to determine HIV prevalence and risky behavior in Burkina Faso prisons in order to assist in HIV prevention and AIDS case management decision making among prisoners.

Methods

This was a cross-sectional study carried out from September 3–10, 2014 among 18 years aged and over prisoners, in prisons of each of the 13 administrative regions of Burkina Faso with prisoners' informed consent. Data were collected

using a questionnaire that covered general informations on HIV/autoimmune insufficiency syndrome (AIDS) and sexually transmitted infections (STIs), coupled with blood samples collection, for HIV laboratory analysis purpose.

Results

A total of 1,079 prisoners participated in this study. The participation rate for interviews was and blood samples collections were 100 per cent. The majority of participants (97.8 per cent) were men, among whom 9.7 per cent reported a history of STIs. Nearly 50 per cent of these took no precautions to avoid infecting their sexual partners. Implementation of HIV/AIDS prevention and control activities in prisons was low (43.2 per cent). Condom use was also low (11.2 per cent). HIV infection Screening was insufficient: only two out of five prisoners had at least one HIV screening. HIV screening opportunities was uncommon and prisoners pointed out the lack of organization of screening campaigns in prisons. HIV prevalence was nearly 3 per cent.

Conclusion

The exposure level of prisoners to HIV transmission prevention interventions was low. Specific measures are needed to increase condom use for HIV/AIDS and STIs prevention in prisons.

Key Words

Prison, prisoners, HIV, STIs

What this study adds:

1. What is known about this subject?

HIV prevention and interventions are very poorly implemented in prisons despite the very high HIV exposure risk.

2. What new information is offered in this study?

1. Risky behaviour and high exposure to HIV and STIs in Prisons: Half of STI infected prisoners took no action to protect their partner
2. High prevalence of HIV infection in prisons, nearly 3 per cent
3. Poor implementation of HIV and STIs prevention and control interventions in prisons
4. Poor use of Health services by prisoners: Half of STI infected prisoners did not use health services for STIs case management.

3. What are the implications for research, policy, or practice?

This research raises the urgent need of strengthening HIV and STIs prevention and control interventions in prisons, given the high exposure to risky behaviour and the high prevalence of HIV among prisoners.

Background

The human immunodeficiency virus (HIV) epidemic in Burkina has been undergoing a stabilization phase for several years. It is the mixed form in terms of prevalence in the general population and among so-called "key" or marginalized populations; HIV is widespread but tends to be concentrated among high-risk groups. Indeed, HIV prevalence in the general population (15–49 years aged) was one per cent in 2010 according to the report of the fourth demographic and health survey (DHS IV), whereas this was 1.8 per cent¹ during the DHS III, conducted in 2003.² Prevalence among the adult population is 1.1 per cent with a confidence interval CI of 95 per cent [1.8–1.1] in 2012 according to (UNAIDS 2013). Key populations include: men who have sex with men (MSM), sex workers (SW), injecting drug users; prisoners, and transgendered people. Indeed, these constitute the most HIV-infected populations worldwide, and without their involvement, the fight against the epidemic will be difficult, or even impossible.

According to the report "Research to Prevention (R2P) 2015",³ HIV prevalence in Burkina Faso was respectively 16.19 per cent, and 3.6 per cent among SW and MSM. According to the same source, HIV prevalence among MSM was respectively 1.7 per cent and 2.7 per cent in Ouagadougou and Bobo-Dioulasso. In addition, a study carried out among prisoners in Burkina Faso in 2000 revealed a seroprevalence rate of 11.4 per cent.⁴ In 2007, the rate had dropped to 2.7 per cent,⁵ this rate was really well above the national average of 1.6 per cent according to the UNAIDS 2008 report. A study conducted at MACO (the largest prison in Burkina Faso, located in Ouagadougou) in

2007 revealed an HIV seroprevalence rate of five per cent.⁶ Increasingly, poor prison conditions lead to HIV exposure in prisoners.⁶ Thus, prison appears to be a hotbed of the potential spread of HIV infection and other sexually transmitted infections (STIs).

As DHS are conducted in general population, the differences between these HIV prevalence rates according to DHS sources and studies conducted among key populations may mainly be explained by the fact that key populations' behaviours, their environment are more likely to expose them to HIV infections; furthermore, health services coverage among key populations such as prisoners appears to be very low.

Therefore, supportive projects and programs targeting this group lack basic informations to plan their activities (e.g., population size, geographical distribution, socio-cultural representations and behaviours of groups in the population, HIV and STI prevalence). This does not enable appropriate adjustment of activities to the actual situation in the country. Given the severity of the epidemic and the lack of epidemiological information related to the specific subpopulation of prisoners, under the financing of the 10th Round of the Global Fund, Burkina Faso got the opportunity to conduct this study on prisoners incarcerated in prisons of the 13 administrative regions of Burkina Faso. The purpose of this survey was to determine HIV prevalence among prisoners and their risky sexual behaviors in order to provide data to assist in decision-making for better guidance of activities design, implementation and Follow up.

Method

This is a cross-sectional qualitative and quantitative study conducted during the period of September 3–10, 2014 among male and female prisoners in Burkina Faso who met the inclusion criteria, i.e.,

- (i) 18 years and over aged
- (ii) having stayed in prison for at least 30 days prior to the date of the study
- (iii) having given written consent

This study covered the prisons within the 13 regions of Burkina Faso and concerned both men and women kept in custody.

Regarding the selection of sites, 18 prisons in all of the 13 administrative regions were chosen. In regions where there were several prisons, the most populous one has been selected for convenience, with the aim of covering a larger number of prisoners and with the assumption that the most

populated prisons have special characteristics (e.g., risky practices).

The choice of prisoners has been made randomly. Prisons are subdivided into cells with cell leaders and prisoners are segregated by sex. To select the respondents, mass sensitization of all prisoners was carried out regardless of category. Cell leaders and prisoner peer educators were sensitized and informed about the process of the survey. Cell leaders recruited convicted prisoners who voluntarily accepted inclusion in the study until the number of subjects needed has been reached. All women have been systematically approached to participate in this study, given their limited numbers.

The study was to cover at least 20 per cent of the total nationwide prison population of 4,615 prisoners (Ministerial Committee for the Fight against AIDS-Ministry of Justice of Burkina Faso). Referring to previous studies results, it has been assumed that 10 per cent of prisoners may not accept to be included in the study, so the expected minimal size of the sample was 1,015 prisoners. The survey used interviews and samples of biological specimens to assess prevalence rates and assess risk behaviours based on the data collected.

The questionnaire has been pretested and adjustments have been made to meet users' and interviewees' needs.

Data collection process regarding the biological aspects has been conducted in respect of the anonymity principles using codes.

The samples were labelled with the questionnaire codes, preserved and sent to the laboratory for analyses

In the laboratory, serological tests for HIV have been performed pursuant to the HIV screening algorithm applicable in Burkina Faso and endorsed by the National HIV/ AIDS Steering Committee.

HIV screening has been conducted following the approach shown in Figure 1. The first test has been conducted using the reagent Determine HIV1/2. The second test, for those tested positive with Determine, has been performed using Immunocomb II HIV Bispot.

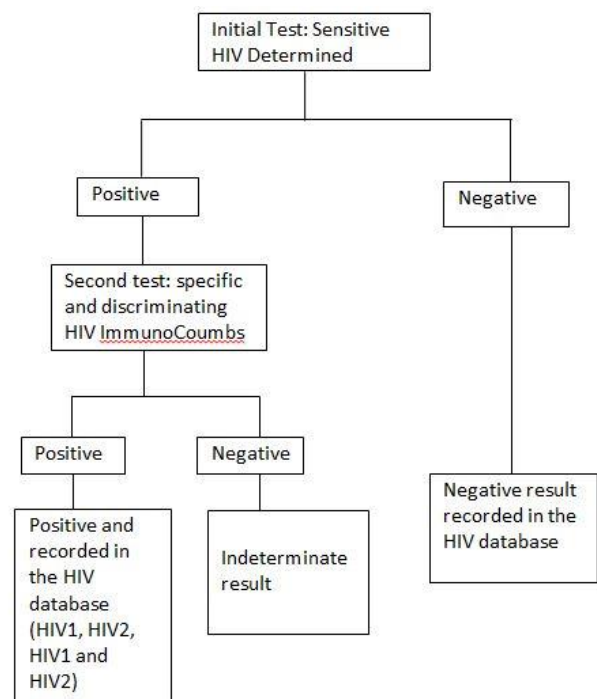
Prisons National administration has been contacted by official letter in order to allow the survey and to guarantee security for both respondents and non-respondents in order to mitigate any kind of coercion.

Prior to the survey, the study protocol (including

methodology, data and samples collection tools) has been approved by the national ethics committee for health research.

Data have been entered and processed with Epidata software. After the data have been entered, they have been checked for their internal consistency with answers. The screening of the database consisted in completeness checks, suppression of duplicates, data consistency checking, data merging and lastly results from laboratory analysis were released.

Figure 1: Algorithm for HIV test



Results

In total 1079 prisoners were proposed to participate in the study, all participated in the behavioural survey and in the blood sample for the HIV test, ie participation rate of 100 per cent.

Distribution of respondents per region

Among 1079 prisoners in total, the prisons of Ouagadougou, in the Central Region (30.7 per cent); Fada-Diapaga, in the Eastern Region (11.9 per cent); Bobo-Dioulasso, in the Haut-Bassins Region (9.5 per cent); Dedougou in the Boucle-du-Mouhoun Region (7.6 per cent); Dori, in the Sahel Region (6.6 per cent); Tenkodogo, in the Central-East Region (5.2 per cent); and Manga in the Central-South Region (5.1 per cent) had highest proportion of prisoners who participated in the survey.

Socio-demographic characteristics

Most of the prisoners surveyed were men (97.8 per cent) compared with 2.2 per cent who were women. The mean age was 29.86 years, with extremes of 18 and 68 years and a standard deviation of 7.68 (Table 1).

Table 1: Socio-demographic characteristics (N=1079)

Variable	Number	Percentage (%)
Sex		
Male	1 055	97,8
Female	24	2,2
Age groups (years)		
18-24	282	26,1
25-39	669	62,0
40-49	101	9,4
50 and over	27	2,5
Marital status		
Single	463	42,9
Married monogamous	442	41,0
Married polygamous	125	11,6
Separated / divorced / widows and other	49	4,5
Level of education		
No level	612	56,7
primary	242	22,4
secondary	190	17,6
Higher level	21	1,9
Only literate /Other	14	1,3
Occupation of respondents prior to incarceration		
Official / employee	25	2,3
commercial / seller	267	24,7
farmer	255	23,6
Breeder	118	10,9
Student / pupil	35	3,2
Other	379	35,1

Tobacco and drug consumption

More than half of respondents (58.2 per cent) had experienced drinking alcohol and 31.6 per cent of respondents reported having consumed alcoholic drinks (regardless of type) daily or several times per week, respectively. More than 37 per cent of respondents said they had never smoked tobacco and 39.1 per cent reported that they had not smoked tobacco while incarcerated. In addition, 19.7 per cent reported having used illicit drugs (all forms) and 1.9 per cent continued to use illicit drugs in prison.

Sexually transmitted infections

Sexually transmitted infections over the previous 12 months were studied (not necessarily within the period of stay in

prison). Within the previous 12 months, 9.7 per cent had a history of STI in the form of lesions or sores on the genitals and four per cent had experienced abnormal discharge from the genitals.

Among those prisoners who reported STI symptoms, 49.4 per cent had taken no action to prevent infecting their sexual partner(s). Such failure to take preventative action was most often reported by prisoners in the Central-South and Central-East regions with 53.3 per cent and 62.5 per cent, respectively.

Among surveyed prisoners, 36.6 per cent reported that they abstained from sex during detention, and 6.1 per cent reported using condoms to preventing STI transmission between themselves and partners. In addition, 77.6 per cent reported that they had not had their sexual partners treated while 19.3 per cent reported that they had enabled their partners to seek treatment.

Signs or symptoms of STIs were reported at the time of the survey by 17.9 per cent of prisoners. Self-medication was reported by 32.5 per cent of prisoners and 18.5 per cent of prisoners attended health centres. According to this survey, 11.9 per cent of prisoners attended prison health facilities to receive treatment, and partner pharmacies accounted for 12 per cent of health care provision to prisoners with STIs.

Sensitization through STI/AIDS prevention activities

Prisoners may have been exposed to STI/AIDS prevention activities outside or within the prison. Some actions in prisons are carried out by NGOs or associations. Two out of five prisoners (43.2 per cent) reported that they had been sensitized to AIDS and STIs (8 out of 10 prisoners in the Boucle-du-Mouhoun and Central-South Regions and one out of 10 prisoners in the North and Central-North Regions had access to sensitization campaigns), while 70.3 per cent had already attended a demonstration on condom use. With regard to sensitization messages on STIs and AIDS, 92.5 per cent reported having heard or seen them. Among those who were exposed to the messages through media, 77.8 per cent heard them on radio 59 per cent saw them on television, 46 per cent learned about them from health workers and 45.7 per cent from NGO staff.

Counselling and voluntary screening

More than two out of five prisoners (46.7 per cent) had already been screened for HIV. Of these, 82.3 per cent had been informed that they had retrieved their test results. Poor organization of the screening sessions was pointed out

by 33.9 per cent of prisoners, and among these, 60.1 per cent participated in at least one of the sessions.

Prisoners who did not participate in these sessions gave the following reasons: "I was not invited" (46.9 per cent), "I did not find them important" (29.7 per cent) and "I was excused" (15.8 per cent).

Prisoners’ knowledge, opinions and attitudes towards HIV/AIDS

Prisoners’ attitudes and opinions with regard to HIV/AIDS have been assessed through their knowledge of its transmission pattern, prevention, and behavioural responses to people living with HIV/AIDS.

The majority of prisoners (93.8 per cent) responded positively regarding understanding of virus transmission during unprotected sex. Mother-to-child transmission of HIV received positive responses in 61.9 per cent of prisoners surveyed. Mosquito bites were seen as a means of virus transmission by a large number of prisoners (56.3 per cent). Also, 26.5 per cent of prisoners believed that one can become infected by sharing a meal with an AIDS patient, and 49.5 per cent of prisoners reported they would be willing to share a meal with an HIV-infected person.

Partners, sexual practices, condom use and accessibility

When questioned about sexual practices, a large majority, 84.2 per cent, had sex with their opposite-sex spouses, 32.1 per cent had sex with SW, 61.7 per cent had casual partners, and 1.1 per cent had sex with same-sex partners.

Sexual practices and use of condoms

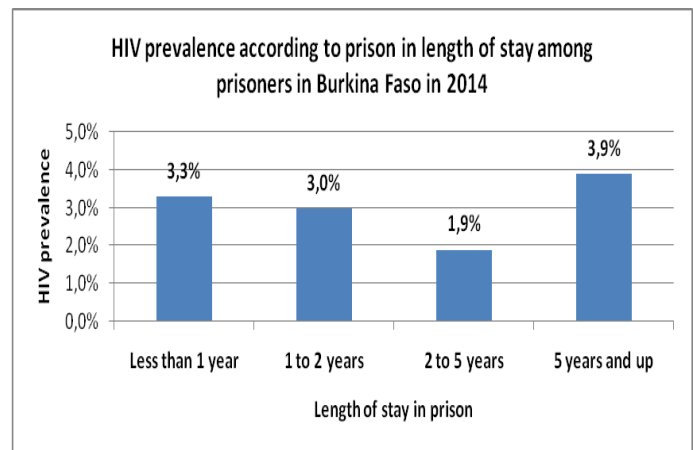
Among all prisoners 30 per cent reported using a condom in their first sexual experience. Moreover, 73.5 per cent of prisoners said they had used a condom at least once during sex. Regarding sex in prisons, only 0.9 per cent said they had sex in prison, and half of these did not use a condom.

Anal sex was mentioned by 3.2 per cent of prisoners and 48 per cent of them reported using condoms. Generally speaking, the regular use of a condom (10 times out of 10) with an occasional or regular sexual partner, paying or not, regardless of whether the partner was the same sex, was observed by 11.2 per cent all prisoners. The main reasons for the low rate of condom use include: for greater enjoyment (42.9 per cent), trust in partner (19.6 per cent), not necessary (17.1 per cent), had drunken too much (12.3 per cent), desire to have a child (11.9 per cent), refusal of the partner (11.5 per cent), dislike of condoms (10.7 per cent).

HIV prevalence among prisoners

The overall HIV prevalence among prisoners participating in the study was 2.97 per cent; HIV1 was the sole serotype found. Several regions have prevalence higher than or equal to 5 per cent: the Hauts-Bassins (6.06 per cent), the South-West (5.71 per cent), the Central-South (5.66 per cent) and the Boucle-du-Mouhoun (5.0 per cent). However, there were regions where no cases of HIV infection were reported (Central-East, Central-North, Central-Plateau and Sahel Regions) (Figure 2).

Figure 2: HIV prevalence according the length of stay in prison among prisoners



According to the age, the HIV prevalence was higher (3.4 per cent) among prisoners 25–39 years aged while the lowest prevalence rate, 1.5 per cent, was found among 18–24 years aged prisoners.

Discussion

About one third of the 1,079 prisoners who participated in the survey have been recruited at MACO (a prison located in Ouagadougou). The percentage of women respondents was lower: two per cent, while almost the prison population is overwhelmingly made up of men. This is contrary to the overall population of Burkina Faso, which, according to the last national census, comprised 52 per cent females and 48 per cent males⁷. There are relatively few women in prisons, and this is fairly consistent in almost all the prison systems throughout the world.⁸⁻¹⁰ Roughly three out of five prisoners (62.0 per cent) were aged between 25 and 39 years. This shows how young people, the bulk of the work force for production and the economy, are affected by prison issues in Burkina Faso. As cited by Ouédraogo et al. in 1990, the majority of youths and men among the prison population seem to be governed by a rule described by Bénézech et al.,

namely, "Regardless of the prison and socio-political environment, it is established that there is a close link between criminal behaviour, gender and age. Most of the identifiable offenders are young."¹¹

Depending on the level of education, prisoners with the primary level education or lower were predominant: 79.1 per cent. 56.7 per cent of these were illiterate. Only 19.5 per cent of prisoners had reached at least the secondary level. Our results are similar to previous studies led by Kyelem and Diendere in Bobo-Dioulasso and Ouagadougou; these authors respectively reported proportions of prisoners who had never gone beyond the primary level equal to 54.6 per cent and 72 per cent.^{6,12} Adjei et al noted that 67.6 per cent of prisoners in Ghanaian prisons had less than primary education.¹⁰ From this observation we can say that illiteracy is one of the characteristics of the prisoners in Africa. Delinquency is usually the result of disadvantaged populations who do not have access to school (geographic, financial, availability).

The jobs most often held by prisoners prior to their incarceration were, respectively, trade/ seller, (informal sector activities) 24.7 per cent, agriculture/ livestock 34.5 per cent. These results corroborate those of previous studies in the Bobo-Dioulasso and Ouagadougou central prisons, where the majority of prisoners were recruited from farmer-breeders (33.3 per cent and 20.5 per cent respectively) And traders (19.6 per cent and 30 per cent).^{4,6} This finding could be explained, on the one hand, by the low level of education of prisoners, since those excluded from the education system are obliged, in order to cope with the difficulties of life, to pursue trades which do not require qualification and on the other hand, by the great exposure of certain liberal professions such as trade and informal sector activities to embezzlement.

The rate of prisoners who reported having ever used any form of illicit drug was 19.7 per cent. Among prisoners who abuse any forms of drug, 1.9 per cent continued to use drugs in prison, as it is the case in most prisons.^{9,11,13,14} Despite security measures taken by prison authorities, drug abuse still takes place within prisons. Consistent with the generally higher crime rates among illiterate populations, nearly 56.7 per cent of the respondents in our study were illiterate.

One out of 10 of prisoners (10 per cent) had suffered from an STI in the past. This may account for the relatively high HIV seroprevalence (2.97 per cent) currently found among prisoners. However, STI history has been reported at fairly

high levels in several regions (Central Plateau (12.5 per cent), Sahel Region (12.7 per cent) but no correlation with HIV seroprevalence were found (0 per cent). These results could be explained by the fairly small sample sizes in these prisons.

STI histories over the previous 12 months were reported by 10 per cent of prisoners. This period, which can be juxtaposed with the average length of stay of prisoners, i.e., 11 months, suggested that many of them have been infected while they were in prison. The rate of prisoners who reported having signs of STIs at the time of the survey was about 18 per cent. Because we know that 50 per cent of prisoners had not taken any measures to avoid infecting their sexual partners or to get treatment for themselves or their partners, appropriate measures should be taken for the effective treatment of STI cases among prisoners. In the case of STI infection, most prisoners reported resorting to self-medication. This practice is probably exacerbated by over-the-counter medication.

The exposure of prisoners to sensitization campaigns remained low at 43.2 per cent and varied widely between regions. Indeed, while eight out of 10 prisoners in the Boucle-du-Mouhoun and the Central-South Regions had access to sensitization sessions, only one out of 10 in the North and Central-North Regions had such access. This emphasizes the low level of implementation of activities against HIV/AIDS in prisons.

HIV screening activities implementation rate among prisoners was also fairly low; only two out of five prisoners had an HIV test at least once. Despite this, the rate of prisoners who have been informed about their test results was satisfactory. HIV screening opportunities are not frequent and prisoners pointed out that the organization of screening sessions in prisons was irregular.

Prisoners' knowledge, i.e., appropriate information on HIV transmission, means of prevention and stigma, was relatively poor. Thus, there are still rumours among prisoners, as many still believe that mosquito bites and the sharing of meals with persons living with AIDS can be a source of transmission of the disease.

Regular use of condoms was very low, especially among prisoners who practice anal sex. Indeed, having sex with a partner usually occurs outside prisons, during leaves granted on weekends so that prisoners can visit their families. Due to the shortness of the leave and to the fact that prisoners are under surveillance, obtaining condoms

before sex may not be seen as a priority. In addition, condom distribution is restricted in prisons, according to the prisons' administration national regulations. Also, according to prison administration, there is no official mechanism allowing sex in prison. Therefore, some prisoners have sex in prison secretly, which does not encourage the use of condoms.

HIV prevalence among prisoners was about 3 per cent, which is about three times higher than the rate among the general population according to successive surveys conducted in Burkina Faso (UNAIDS 2013). This is corroborated by data obtained in other countries according to the UNAIDS report 2013: HIV prevalence is higher among prisoners than in the general adult population in several countries, particularly in South Africa, where HIV prevalence in prisons is 2.4 times higher than in the general population;¹⁵ in Ukraine, the rate among prisoners is 15 times higher.¹⁶

Our results on HIV prevalence were lower than those found in other studies conducted in Burkina Faso prisons. Indeed, in 2000, Tiendrebeogo et al. found an HIV prevalence of 11.4 per cent in prisons;⁴ A study conducted at MACO in 2007 found five per cent HIV seroprevalence.⁶ The latest national study conducted among prisoners in 2007 revealed a prevalence of 2.7 per cent.⁵ Despite the efforts that have been made to fight HIV, especially in prisons, the current prevalence in this study is still significantly higher than that in the general population.

Conclusion

This bio-behavioural study on HIV conducted in prisons made it possible to collect data in prisoners about their knowledge of STIs and information sources, their sexual activity, their use of male and female condoms, their STI history and treatments, and HIV screening, prevention and control services in prisons. The study found that the use of condoms, an effective means of preventing HIV/AIDS and STIs, is low. This may account in part for the dramatically higher rate of HIV seroprevalence in this group compared with that in the general population. It is obvious that prisoners are a high-risk group in terms of HIV/AIDS and STIs. With this in mind, specific measures need to be taken to effectively act in order to fight HIV/AIDS in prisons.

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ACKNOWLEDGEMENTS

The authors would like to thank the HIV/AIDS Permanent Secretariat of National council for HIV/AIDS and STIS prevention and control (Burkina Faso), Public Health Support Office 96, Regional Directors of Health, Prison officials, Prisoners who participated in this study, the staff of the Pediatric laboratory Charles De Gaulle.

PEER REVIEW

Not commissioned. Externally peer reviewed.

CONFLICTS OF INTEREST

The authors declare that they have no competing interests.

FUNDING

None

ETHICS COMMITTEE APPROVAL

A special emphasis was placed on ethical aspects, and a study protocol including those ethical considerations was submitted to the ethics committee for health research in Burkina Faso, which approved this study through its session number 2014-06-067 dated June 4, 2014.